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CHITRAL, HUNZA, AND THE HINDU KUSH.*

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It is with a good deal of compunction that I address you on these states of the Hindu Kush which are to form the subject of my lecture to-night, for I feel that the honour of doing so should have fallen on others than myself. I was not the first, by many, to explore and open up these states. Many had gone before me, and all that I could do was to follow in the steps of these first pioneers, and carry on the work which they had commenced. Poor Hayward, the first intrepid Englishman who pushed his way into these mountain recesses, never returned to tell the tale of what he saw, for he was cruelly murdered in Yasin in 1870. But Biddulph, the first to visit Chitral and the first to visit Hunza, might well have borne the privilege which is now falling to me. And Macnair, Sir William Lockhart and the members of his mission, Mr. Ney Elias, Colonel Durand, Mr. Robertson, Captain Tyler, R.E., were all my predecessors, and could have told a more interesting tale than mine of how they found these primitive, picturesque hill-men at their very first touch with the outside world.

But while I cannot lay claim to your attention as the first to visit this interesting region, I can, at least, ask it as the last to do so. It has been my privilege to represent the British Government in both Hunza and Chitral, and it is only a few months ago that I returned from the latter place, after a stay of more than two years among these little states of the Hindu Kush.

Before, however, proceeding to any description of these, it is necessary for me to put clearly before you the reasons why these regions

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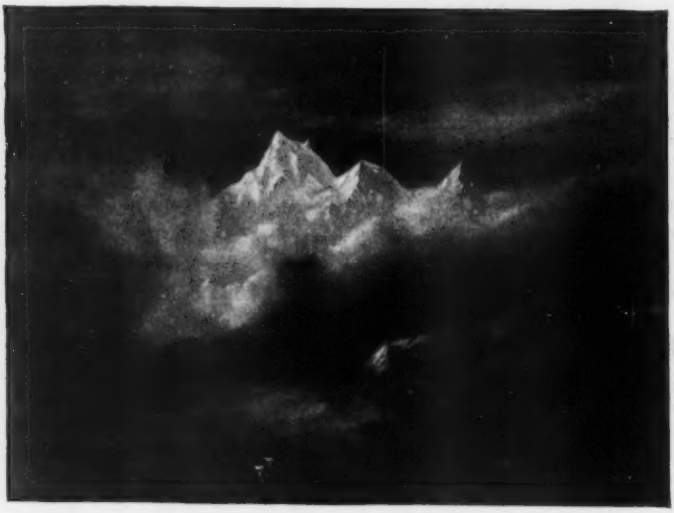
should especially interest you. These are many. There are, first, the political and military reasons. Here is the point where, as the title of Mr. Knight's remarkably interesting book runs, 'Three Empires Meet.' The Indian, the Russian, and the Chinese empires all meet here, and where three such empires meet the eyes of the people who inhabit them must naturally be turned.

To the members of a scientific society, however, such considerations may possibly not have much weight. These would require some deeper attraction than the mere political boundaries of different races. To such the Hindu Kush affords the highest interest; for we have here moun-



A LOST SNOWPEAK, HINDU KUSH.
(*From a Drawing by Colonel H. C. B. Tanner.*)

tain ranges of colossal height and only of recent years explored, and races of people of a very primitive type, who, shut up for centuries in their mountain fastnesses, have preserved intact much of their original type of manners and customs.

I was brought up a soldier, and became a "political," as we are called in India; my interests were therefore more purely military and political rather than scientific; but as it was a part—the main part, I may say—of my duties to study the character and nature both of the people and the country, I shall hope that some of the impressions I formed of them may prove interesting to you.

The country I am to describe to you, then, is that lying immediately north of Kashmir and south of the Pamirs, which is drained by water

flowing into the Indus, and comprises the states of Hunza, Nagar, and Chitral. It is an entirely mountainous country, with never a stretch of plain more than 3 or 4 miles in length. The valleys are all deeply cut, and even the lowest mountains are 13,000 or 14,000 feet in height, while some rise to 25,000. The nature of the mountains will best be gathered from the lantern slides I propose to show you. Except in the lower part of Chitral and in occasional secluded side valleys, they are perfectly bare. In some parts one may travel for march after march without seeing a sign of a tree outside the valley bottoms, and the barren character of these hills has much to do with their forms and with that of the valleys. What we see here are great masses of rocky mountains, their summits in the loftier regions clothed in snow and ice, but in most parts bare, and their bases always so. On these rocks the sun in summer beats down with a force which makes them so hot it is impossible to keep one's hand on them without burning it; and in winter come frosts reaching below zero Fahrenheit, which freezes the draining of the snow and rain in the crevices of the rocks, and breaks them off by the same process as water swollen into ice bursts up our water-pipes. Owing to the extremes of temperature, the rocks in all this region are very loose, so when the snow melts off them at the close of winter, and still more so when a storm of rain or a cloud-burst falls upon these mountains, the whole of their sides is washed of their loose *débris*, which comes pouring down a liquid stream of mud and stones and boulders into the gorges, and there piles itself up till, by the pressure of weight from behind, it is forced out into the more open main valley and then spreads itself out in one of those alluvial fans, or *cones de déjection*, which occur in all mountainous countries, but which are seen in these dry lofty regions of the Hindu Kush in their fullest development. These are one of the most characteristic features of this country, and it is for this reason that I direct your attention to them. The traveller here sees in the distance some big snowy peak, but the greater part of the scene around him is of bare hillside, and the valley bottoms, which to traverse are simply a succession of these alluvial fans separated here and there by some huge rocky bluff, but often running one into the other in a continuous stretch.

The climate of these regions is one of extremes. At Chitral (5000 feet) the maximum I registered was 100°, and at Gilgit (4800 feet) Dr. Roberts recorded a maximum of 110°. These temperatures were in the cultivated parts, where the vegetation makes it cooler. In the bare open valley, where the sun comes with full force on the rocks, it must be certainly greater. As to the minimum, in Chitral in February (I have no January records) the lowest reading was 15°, and in Mastuj (7800 feet) 5° below zero. In Gilgit it is not so cold; the thermometer there does not appear to fall below 20°. The air over most of the region is extremely dry, and the rainfall very small. Nearly all the

moisture from the monsoons, which break over the plains of India, is precipitated on the outer ranges of mountains before reaching these remote valleys; and, though not so dry as the countries east and north —for a certain amount of moisture seems to come up the funnel of the Indus valley to Gilgit and Hunza, and over the Bajaur hills to Lower Chitral—the rainfall on the whole is very slight, and the climate dry and healthy.

The people are all Mohammedans, and a great number of them belong to that Maulai sect who look to Aga Khan of Bombay as their

MIDSUMMER SNOWFIELDS LOOKING TOWARDS CHITRAL.
(From a Drawing by Colonel H. C. B. Tunner.)

chief. They all dress alike, and they are very similar in feature and appearance.

My first visit to these Hindu Kush states was made in 1889, when I entered Hunza from the north and traversed the length of the country on my way to Gilgit. In 1891 I again crossed the Hindu Kush from the north, and followed down the Ashkuman valley on my way to Gilgit once more. Of these journeys I gave you some account three years ago. I had been a mere bird of passage through the states, and had had no opportunity of really studying them. But in 1892, after holding the appointment of Assistant-Resident in Kashmir for three months, I was delighted to find myself appointed to the important and interesting little state of Hunza.

Since my visit to it three years previously, however, a vast change

had taken place. That great potentate, Safder Ali, who had boasted and really believed that he was the equal of his three neighbours the Empress of India, the Czar of Russia, and the Emperor of China, had been obliged to flee from his country, which was now ruled by his younger brother, Mohamed Nazim Khan, an attractive young man who had accompanied me through Hunza on my former visit, and whom I had also met in Sarikol.

It might have been expected that now, only seven months after our little war with these people of Hunza and Nagar, the country would still show signs of disquiet. But anything more quiet and peaceful than these two little states it would be hard to find. My predecessor, Captain Stewart, had been in political charge ever since the war, and to him and the instructions he had received from Colonel Durand at Gilgit must be due the credit that these people, who had only a few months previously been up in open arms against us and fighting us tooth and nail, were now so quiet that British officers could ride anywhere about the country without an escort of any description. The fact is that the people soon recognized that our presence implied no interference with their internal affairs or customs. They were still ruled by their own chiefs and in their own way. The only difference was that they were obliged to have rulers who would preserve peaceful relations with the British Government, and that their incessant raids on Yarkand territory and fightings with the Kaşhmir troops at Gilgit and amongst themselves had been stopped once and for ever. Whether this result is really satisfactory for them is a question to which we have to pay attention, and seek to solve by peaceful methods. At any rate, the people are now happy and contented, and, with the usual Oriental acceptance of the inevitable, pass their lives as if the sight of British officers in their country was one which they had been accustomed to from their childhood.

The Nagar people are less taking than their neighbours across the river, but the Hunza people are a particularly attractive race. I adhere to the opinion I expressed after my first visit to their country in 1889, that they are not really a fighting people. They do not fight for fighting's sake like a Pathan tribe does. When they did fight, and certainly when they raided, it was more by command of their chiefs than from an impulse of the people themselves. But the fighting and the raiding had created in them a strong, hard spirit, noticeable at once in their faces and in their carriage; and the severity of the climate, and the hardship of existence, in a country only able to support a very limited number of inhabitants, had contributed to the formation of that power of endurance which is so especially remarkable in them. I found them, too, to be a cheery, companionable lot, who would go mad over a game of polo, delight in dancing, and always be ready for a "tamasha" of any description. Every British officer who has been

in the country since the war has spoken well of them, and I thought myself very fortunate to have been appointed to superintend such an interesting, attractive state.

And besides the people, the country itself is very fascinating. I had remembered the grandeur of that great mountain Rakapushi from my former visit. But now seeing it again, I found it to even surpass my remembrance of its glories. From Baltit, the capital

RAKAIUSHI.
(*From a Drawing by Colonel H. C. B. Tanner.*)

—if one may apply such a dignified title to a small collection of huts—of Hunza, you look out over a mass of foliage down the valley to the giant mountain mass at the end, a wall of snow of glittering beauty. There were other scenes, too, of almost equal grandeur; but I must not detain you by describing all the beauties of Hunza and Nagar, for that has already been done far more eloquently than I could by Mr. Knight, Mr. Conway, and Mr. Curzon, and the scenes in Hunza are now becoming as familiar as those in the Alps. I will only say, speaking from the point of view of a resident in the country, that they are such as one can never tire of; that each fresh

glimpse of Rakapushi's glories, each look across the river to the Golden Parri of Nagar, each new sight of the rugged peaks that tower above the fort at Baltit, seemed to enter deeper into one's soul than the last. They never failed to impress, never palled on one. As things of beauty they were a joy for ever.

While I was quietly enjoying all this grandeur of scenery and all the pleasure of the autumn season in Hunza, with its glowing autumn tints on the trees and frosty invigorating air, I was rudely disturbed one morning from these dreams of peace by an urgent letter from Colonel Durand, the British agent at Gilgit, telling me that the Mehtar of Chitral had been killed, and the throne usurped by an uncle; and that Nizam-ul-Mulk, the elder brother of the man who had been killed, was starting off from Gilgit to make a bid himself for the throne. Colonel Durand was going to protect our frontier with a small force, and he asked me to come down at once to Gilgit with as many Hunza-Nagar men as I could collect to join the little force. The note arrived at 8.30. I had an interview with the Mir as soon as I could. Before 11 I had packed up my things, and handed over charge to Mr. Gurdon, my successor. At 1 that same night I was in Gilgit, 65 miles off, and by 10.30 the next night a hundred men from Hunza and Nagar were there too. That is to say, in about thirty-six hours from the time of receiving the warning, they had covered on foot 65 miles of mountainous country. Nor did they halt at Gilgit. They went straight on by double marches—that is, 20 to 25 miles a day—towards Chitral, where they rendered very important services in the little scrimmage which decided the fate of the usurper, and put Nizam-ul-Mulk on the throne.

I quote this as an instance of the marching powers of these hill-men, and their readiness to start off on a long march at a moment's notice. It is an instance, also, of how readily former enemies can be turned into useful allies. I ought, too, to describe the man who was the moving spirit in this march. He was named Humayun, the principal Wazir and right-hand man of the Mir of Hunza, and the leader of one of the most renowned and successful raids which these Hunza men had ever made upon Yarkand territory. A man of extraordinary ability and force of character, one of the best polo-players in the country, full of go and dash, and a born leader of raids. On one occasion in Hunza I asked the Mir to allow Humayun to take a hundred men and just show me how they would attack a village. Humayun, with great alacrity, collected his men, took a rapid glance round to grasp the situation, and then in clear, quick words he gave his orders, dividing his men into two parties, each under a leader, and pointing out to them how the attack was to be made, the objective point of each party, and the general line by which they were to reach it. With wonderful dash each party then set off. They rushed at full speed from rock to rock, seized every point of cover in the most perfect manner, and finally joined in a combined

attack on the village. The whole thing was a most interesting exhibition, and what struck me most about it was the dash, the promptitude, and the intelligence with which it was carried out, without any preparations, on the spur of the moment.

As I have said so much about the intelligence of these people in the science of war, I feel I ought, before changing the scene to Chitral, to say something of their aptitude for the arts of peace. Behind the fort at Baltit is a cliff beetling over a mountain torrent flowing down from the snow-peak in the background, and right along the face of this cliff may be seen a watercourse constructed there by the men of Hunza with but few other instruments than the curved horns of the ibex. Iron tools were until recently almost unknown in the country. Yet,

CHITRAL VALLEY, LOOKING SOUTH.
(*From a Photograph by Captain Younghusband.*)

with the simple means at their disposal, they had made a way for the water round the cliff, piling up stones and earth where it was at all possible to do so, and, with props and logs of wood let into the cliff, had made galleries round the more precipitous parts. In one portion—through the old morraine of a glacier—they had made a tunnel, scooped out entirely with ibex-horns. The water was then conducted in a wide channel for 6 or 7 miles through the cultivated lands of Hunza. Altogether this water-channel was a very good illustration of the ingenuity these rough people possess, and of their ability to do much with a very little.

I must now turn to Chitral. I fear it is too much to expect you to follow me through the kaleidoscope of events which has occurred during the last two and a half years in the country, but I will attempt to put them before you as clearly as possible. Up to September, 1892, Chitral was governed by a strong vigorous ruler named Aman-ul-Mulk, who

had a huge family which included seventeen sons. In Mohammedan countries, as a rule, no successor is named for the throne, which naturally falls to the son who can first manage to seize it and afterwards hold it. It was always anticipated, therefore, that on the death of old Aman-ul-Mulk there would be a general scramble for the throne. This is exactly what occurred. The old man died; his second son Afzul seized the fort at Chitral, killed as many of his brothers as he could lay hands on, and drove Nizam, the eldest, out of the country. This latter prince fled to Gilgit, and his fortunes seemed at the lowest ebb. Suddenly, however, like a bolt from the blue, appeared an uncle, named Sher Afzul, from Afghan territory. As I have already mentioned, he surprised Afzul in the fort at Chitral, killed him and one or two of his brothers, and seized the throne. Then came Nizam's chance. He started off from Gilgit with the support of Colonel Durand, and with that was able to turn out Sher Afzul, who fled to Kabul. Nizam-ul-Mulk reigned for a little over two years, and then, on the first day of the present year, was murdered by his brother, Amir-ul-Mulk. Now Sher Afzul has appeared on the scene again, and a Pathan chief from the south as well, and all is chaos once more.

You will have found it hard to follow me through this series of tragic events, but you will at any rate have gathered that the succession to the throne in these wild countries is a matter not easily settled. At the end of 1892, it appeared, however, to be settled for the moment, and Mr. Robertson, so well known for his adventurous journeys in Kafiristan and for the part he took in the little Hunza-Nagar campaign, was sent on a mission to Chitral with three other officers, of whom I was one. We had to march the 220 miles from Gilgit in the month of January, through constant snowstorms, and to cross a pass 12,400 feet high in the heart of winter. We and our escort of 50 Sikhs arrived, however, without any mishap at Chitral by the end of the month. The people were still panting after the excitements they had been going through, but, as they saw the British mission quietly settling down, they gradually calmed; those who had fled across the frontier or up into the mountains returned to their homes, and in a week or two everything was going on as sleepily and lazily as ever.

Mr. Robertson, whose knowledge of the people, gained from his former visits to the country, had contributed so much to this pacifying effect, returned to Gilgit in May, 1893, and I was left, with the escort of fifty Sikhs under Lieutenant Gurdon, to remain by the side of the prince, who was now acknowledged as the rightful Mehtar of Chitral. The task I had before me was a congenial one. Nizam-ul-Mulk I found to be an intelligent, sociable man, and we rapidly formed an attachment for one another. One could not help feeling that he was a weak and timid prince in many ways. But all his faults were open and well known, and, setting aside these, I found in Nizam-ul-Mulk a man

devoted to hawking, shooting, and sport of every kind; a first-rate polo-player; and a man who took a keen and intelligent interest in matters beyond the ordinary run of life in his own country. He had plenty of native ability, and, though unable either to read or write, was well up in everything that concerned his country, and in the character and history of every man, above the very lowest, in it. As he gained confidence, he was able to rule his people well; and he had that natural dignity, so common, indeed, in Orientals, which helped him to fulfil all the ceremonial part of his office with eminent success.

I soon began to see how fortunate I was to have such a pleasant-mannered, amenable prince to deal with, and during the long lonely

CHITRAL BRIDGE AND TIRACH MIR.
(*From a Photograph taken during the Expedition of Colonel Lockhart.*)

months in Chitral I got to look forward to his almost daily visits to me as one of the chief cheering events in my life there. He would talk away on every imaginable subject, from the manufacture of soda-water to the meaning of a New Testament a missionary had sent him, or the status of Dr. Leitner. I used to show him all the illustrated papers I would receive, and books with pictures, and these used to go the round of his following as well. Often there would be a long general discussion upon some point which had interested them, and I found many of these men could speak extremely forcibly and well. The occasions, however, when the orators were seen at their best were when we had to discuss some important political question. Then, in

a perfectly natural manner, without any of that idea of "making a speech," one or other of the leading men of the country would proceed to give the durbar his view of the case. With eloquent gesticulation, and with great expression and flow of language, he would put it forward in a distinct and very forcible manner, which often much impressed me, and which would have done credit to our own House of Commons. I wish I could convey to you some idea of a durbar in Chitral, held in the open, under the shade of some huge plane-tree, with the Mehtar and myself seated on chairs; the principal men sitting on the ground in a semicircle before us; behind them the crowds of attendants and the ever-watchful guards of the Mehtar; and, in the background of all, the great mountain and snowy peaks above.

The Mehtar holds a durbar twice daily, once at about eleven in the morning, and again at about ten at night. At these durbars all the affairs of the country, from the smallest to the highest, and all the gup and scandal too, are discussed. One man comes in, goes up to the Mehtar, seizes his hand and kisses it, and proceeds to lay forth his case about some land. The Mehtar, after having probably put him off once or twice, hears his case, consults some of the men in durbar of the village he belongs to, and decides the case then and there. Another man rushes in, kisses the Mehtar's feet, and says he has killed his wife whom he had caught in adultery with another man. "Very well," says the Mehtar; "go away, and don't come back till you have killed the man too." It is considered in Chitral to save subsequent feuds if both parties in an adultery case are killed, and the matter once for all settled in this summary way.

Of course I was not myself present at these ordinary durbars of the Mehtar's, but I was interested in hearing what went on, to gain an idea of the system of government in the country. This system is an especially interesting one, and in theory, and to a certain extent in practice also, a very good one. Once during the year every leading man in the country is expected to come to Chitral to pay his respects to the Mehtar, and to remain in attendance on him for a couple of months or so. He has to attend these daily durbars and help the Mehtar with advice about the affairs of the state. He receives food from the Mehtar—the meals, by-the-by, are eaten during the durbar, and the most weighty matters decided at dinner—and he is often lodged by him also. At the end of his time the Mehtar gives him leave to return to his home, and presents him with a silk robe or some other sign of favour. Certain numbers of the lower classes have also to come to Chitral to serve the Mehtar or form his guard for two or three months. In this manner there is a constant ebb and flow from the provinces to the capital; the provincial people get to know what is going on at head-quarters, and the Mehtar to become acquainted with those he rules. As a matter of fact, Nizam-ul-Mulk knew nearly every man in the country. As the eldest son of his

father, he had sat in durbar all his life, and so had had ample opportunities for doing so.

In an informal manner, these men have, too, a considerable voice in the government of the country. Whenever a question is raised, the Mehtar refers it to the durbar. "What would it be best to do?" he would say to those about him; and a discussion would follow, the Mehtar would hear all that had to be said, and would then decide for himself what he would do. The more confidential matters were discussed by the Mehtar with his leading men in private audience. But in any case I do not think he ever acted without consulting some of his chiefs, and

CHITRAL FORT, FROM SOUTH BANK OF RIVER.
(*From a Photograph taken during the Expedition of Colonel Lockhart.*)

so, though he was in some ways an autocrat of the most pronounced type, and had the power of giving away his subjects and their lands and houses entirely at his own will and pleasure, yet practically these subjects had a very large share in the government of the country, and the Mehtar had to conform very largely to the customs and will of his people.

Of these people I perhaps saw most during a tour which Nizam-ul-Mulk and I made together in the autumn of 1893, right up to the northern frontier of his country. We rode together nearly the whole day long, followed by a hundred or more of his headmen and followers, and were met at every village by crowds of the people. Even after dark the Mehtar and one or two of his brothers and a few chief men who enjoyed his favour would come to my tent and often sit up to midnight talking

with me. On the march much of the formality of the capital wore off, and out hawking by the way; around the big bonfire at night or crossing a pass in the midst of a snowstorm, one could observe these hundreds of men as they really were, and mark all their traits and characteristics as they came out one by one. They are remarkably like children, these Chitralis, impulsive, gay, careless, easily roused and easily soothed, warm-hearted, I think, and certainly fond of their children; a people whom you would not care for at first sight, as they are, like all other children, shy and timid with strangers, but who, as you get to know them and they you, develop many likeable qualities. They are capable of becoming very warmly attached to British officers, and General Lockhart is a god among them. How he appears to have gained their hearts was by making jokes. They love a joke. It need not be a very deep one, but such as it is it will be received with shouts of laughter, and repeated for years after. The Chitralis are fond, too, of sport of all kinds; shooting and hawking are practised by every man who has or can borrow a gun or hawk. And they play polo with great dash and spirit, old men as well as young. I have seen an old fellow of sixty galloping about and shouting as hard as any of them. The bad points of the Chitralis are the same as those of children, the principal one being their avarice and covetousness. They are always wanting presents, and the more they are given—and they have been given a good many—the more they want. This is a very pronounced and certainly irritating defect in their character. If a present is given to one man, his neighbour wants to know why he too has not received one; and if presents of precisely equal value are not given to men of equal rank, endless jealousy and trouble are caused. They lack, too, the firm, fixed character of men, and are liable to be carried away by impulse in a careless, thoughtless way which may often cause difficulty in dealing with them. Still, with all their faults they are a people one likes to live amongst, and I hope for many years to come they may be allowed to remain in the simple independent state in which I knew them, and which they have maintained for so many centuries in the past.

I have spoken much of the people, but little so far of their country. I once, with Lieutenant Bruce, the companion of Mr. Conway, ascended a peak overhanging Chitral, and it was from the summit of that I obtained the best idea of what the country really is. It is just a sea of mountains, practically bare except in the lower part of Chitral, and it is only in small patches at the very bottom of the narrow valleys that any cultivation at all is to be found. All the remainder is bare brown rock, only relieved by the snowy peaks. Of these the great mass of Tirich Mir, 25,000 feet, is by far the most important. It is visible from Chitral itself, and though it cannot approach in grandeur to the Rakapushi of Hunza, it forms a lovely object as it is seen across the cultivated lands and orchards of Chitral, forming the snowy background to ridge

after ridge along the valley. Except for these snowy peaks, however, the mountains are bare, and the greater part of the valley bottom is so also. But the villages are wonderfully beautiful. At the end of a dreary ride by unadorned rock, the traveller suddenly finds himself amongst green fields and shady orchards, with smooth fresh turf under the shadow of the mulberry, walnut, apricot, or plane-trees with which the villages abound. A Chitra'i has a very good idea of the pleasing in outdoor life. The interior of his house is dull and cold, but his garden is always charming, and he loves to tend his smooth green patches of turf, and lie under the shade of his fruit-trees. These village lands are not, however, very extensive. Chitral, the largest, is only about 3 miles in length and 1 mile broad, while most of the villages are not over a mile. The country is, therefore, but a poor one in reality, and a bird's-eye view of it would show that only a very small fraction of it was cultivated. Yet this is the country which will every year become of more and more importance in our Imperial affairs, and it is the very fact of its sterility and inaccessibility which has caused so much interest to attach itself to it. The rich accessible countries of Asia have been overrun again and again; but round these secluded little mountain states of the Hindu Kush, the tides of conquest have surged without disturbing them. And hence their interest; and, though I have this evening been able to give you only a short and imperfect account of these regions, I hope that I shall have said enough to attract you to these primitive people and the rugged mountains amongst which they dwell.

Before the reading of the paper, the PRESIDENT said: There is no occasion for me to introduce to you such a very old friend as Captain Younghusband, from whom we have already received two most interesting communications. I will, therefore, merely call upon him to read his paper.

After the reading of the paper, the following discussion took place:—

General Lord ROBERTS: Captain Younghusband has given us a very graphic account of a part of the world which has been hitherto almost a *terra incognita*, but that unknown country must now become of intense interest to some people in England, from the fact that it has been found necessary to organize a force for despatch to Chitral, for the purpose of expelling Umra Khan from a place with which he has no right to interfere, and of rescuing the British Agent, Mr. Robertson, and his companions. These officers, with some three hundred native soldiers, are reported to be surrounded in the fort of Chitral by this same Umra Khan, the chief of Dir, a petty state situated about midway between Peshawur and Chitral. Captain Younghusband has told us how precarious is life and how uncertain is succession in these out-of-the-way Mohammedan states, and he has also told us how his friend Afzul-ul-Mulk was treacherously murdered by one of his own brothers on January 1 of this year. Previous to the murder the fratricide had made friends with Umra Khan, and it is probable that the murder was arranged between these two worthies. At any rate, as soon as it had been committed Umra Khan appeared upon the scene. Meanwhile Mr. Robertson had moved to Chitral to support his assistant, Lieutenant Gurdon, and

watch over affairs in the interests of the British Government. Shortly after his arrival there, he had to take refuge in the forts, as the force accompanying him was not strong enough to cope with that which Umra Khan brought against it. Umra Khan was warned by the Viceroy of India that he could not be allowed to remain in Chitral, and that, unless a satisfactory reply was received from him within a certain date, an expedition would be sent to enforce obedience to the demands of the Indian Government. The serious events which have been reported within the last few days make the despatch of this force now a certainty, and we must all hope that it will reach its destination in time to preserve the lives of Mr. Robertson and those with him. The necessity for the expedition is much to be regretted, but one great advantage to be derived from it will open out of the direct route between India and Chitral, a place of great strategic importance in the scheme of our frontier defence. The distance from the Peshawur valley to Chitral by this route *viâ* Swat and Dir is about 200 miles, whereas the route through Kashmir and Gilgit, by which all troops and stores have now to travel, is more than 600 miles in length, and is closed by snow for nearly six months every year. Swat, through which the expedition must pass, is a district we have hitherto carefully avoided, as it is certainly inhabited by a very fanatical race of Mohammedans, and its physical obstacles are said to be even greater than those of other parts of the mountain ranges along which our trans-Indus frontier runs. But I feel confident that neither the one nor the other of these difficulties will prove unsurmountable to the well-equipped and well-organized force which Sir Robert Low will have under his command. Even if the difficulties should prove to be as great as they are reported, they must be overcome, for we cannot allow our officers and the gallant native soldiers with them to be sacrificed without making every effort to save them, and it is out of the question our continuing to occupy Gilgit and Chitral without having a route by which we can communicate with these places rapidly and at all seasons of the year. We have now got control over nearly the whole of the frontier south of the Kabul river, a task which was believed to be most dangerous, if not quite impossible. But the late Sir Robert Sandeman showed that, by discontinuing futile blockades and inconclusive reprisals, and by taking the tribesmen into our confidence, roads—those best of all civilizers—could be made, and the wild border tribes themselves turned from enemies into friends without scarcely firing a shot. With the exception of the Umbeyla expedition in 1863, British troops have never entered the hills north of the Kabul river, so that a special interest attaches to the expedition which General Sir Robert Low has been selected to command. Some may wonder why such stress is laid upon British influence being extended over tribes with whose religion and domestic arrangements we have no intention to interfere, and whose territories we have no desire to annex. Others, again, may think that they ought to be left to themselves, to murder and plunder to their hearts' content, as they have done for generations past, so long as they don't trouble us. The reason why it is advisable for us to try and gain an influence for good over the border tribes (looking at the question from merely a selfish point of view) is that they are a great factor in the defence of the north-west frontier of India. They number more than 200,000 fighting men, and our frontier is conterminous with theirs for some 1100 miles. Thanks to the enlightenment of the present ruler of Afghanistan, our relations with that country are becoming more satisfactory than they have ever as yet been, but it is just as essential we should be on satisfactory terms with the warlike tribes inhabiting the mountainous district between Afghanistan and India. We cannot leave them to themselves until the time arrives when we shall need their assistance, or at all events their neutrality. Before that time comes they should have learned to look upon us as

their friends, and to appreciate the benefits which civilized intercourse with us will confer upon them. Moreover, we must be able to pass through their territories, and make roads to those points which we shall have to occupy in the event of India being threatened by a foreign power.

The Hon. G. N. CURZON, M.P.: I am very glad indeed that Lord Roberts has spoken out with such very great clearness and force, and with the exceptional authority which he may be said almost alone to possess, upon the important question now raised upon our frontier. I of course shall not intrude upon that sphere, with which I have no right to deal; but inasmuch as, in the course of last autumn, I covered nearly every yard of the country which the lecturer has spoken of, for the most part in the agreeable company of himself, I may perhaps be allowed to say a word upon the larger question. Captain Younghusband has been unduly but characteristically modest in his description of the part he has played in these countries, which has been very considerable. In the first place, years ago, before we knew much about them, by his intrepid explorations, he first placed at the disposal of the Indian Government the essential and invaluable information upon which, when military operations were found to be necessary, they were glad to act; and his services have since been equally useful in the task of administration. From my own experience, I can say that Captain Younghusband is eminently gifted to win and to retain the confidence of the native peoples and their chiefs with whom he is brought into contact. A few weeks ago, when I read a paper here, I terminated my remarks at a point where, having crossed the Baroghil pass, I reached the head-waters of the Yarkhun river, which is subsequently known as the Kashkar, Chitral, or Kunar river, and which flows down by Mastuj to Chitral and Jellalabad. For three days I followed down the course of that river, through a gorge of great depth and corresponding grandeur. I remember on the first day of my journey, in the beginning of October, I had to ford the river no less than twelve times, and passed six glaciers. This valley is characteristic of all the Chitral valleys, which sometimes narrow down to a defile through which the river plunges, sometimes open out into a wider river-bed with jungle on either side. Captain Younghusband mentioned to-night the amiable and sporting proclivities of the Chitral people; and I shall never forget a picture that is imprinted on the retina of my memory, viz. the sight of the old governor of the Yarkhun valley, who rode with me for two days—a gallant old gentleman of some sixty or more years of age, with a magnificent beard stained a rich red, and enormous moustachios that protruded for several inches on either side of his face, his head wrapped round with a splendid gold and red turban, a velvet *chogha* or cloak on his shoulders, and his little boy sitting behind him on the saddle and clinging round his father's waist. This brave old sportsman rode hour after hour the whole day through with his hawk on his wrist, and when any quarry arose, whether quail or duck, he let fly his hawk, galloping after it to take up the bird again on to his hand.

In this way I went down to the fort of Mastuj, where I was joined by Captain Younghusband. He did not say much about that place, but I mention it for two reasons: to illustrate both the discomfort and the artistic taste of the Chitralis—the discomfort, because in order to get to my room, which was the principal one in the building, I had to crawl along a low tunnel and climb a rickety ladder, though this was in a royal residence; on the other hand, the artistic taste, because the woodwork of the room was most elegantly carved. From Mastuj we continued down the river by the route which has been described this evening, and I well remember the spot where Captain Ross and his men have been killed. Not that it differs much from any other spot, for the landscape characteristics are uniform, and no great variety occurs in any 10 or 20 miles; but just at that stage Captain Younghusband

will remember that he mounted me on a horse which had been presented to him by the Mehtar. Whether it was owing to my weight or to the severity of the ground, this unhappy animal gave out in the course of the march, and took to spitting blood, so I had to dismount and lead him into Reshun, where he died in the course of the night. That will indicate the steepness and stiffness of the ground, which aggravated the unfortunate disaster to our troops.

One word about the late Mehtar. Words cannot express my sorrow at the lamentable death of that poor man. I quite concur in what Captain Younghusband said about him to-night. He was a man not, perhaps, highly endowed with strength or resolution of character, but differing from the rest of his people in having some conception of mercy. Abandoning the immemorable usage of his family of killing every one of his brothers, he gave a safe conduct to the younger brother, who has now killed him. He also pardoned an old gentleman who plotted against his life, the old fellow of whom Captain Younghusband talked in his paper as playing polo. His sole revenge was to make him captain of the opposite team to himself, which was always sure to be beaten. It is a melancholy thing that this young prince, amiable in character and absolutely loyal, should have been killed.

Captain Younghusband has talked about the good manners of the Chitralis. They are also capable of sustaining a serious conversation. He will remember the morning I spent there, in which for the best part of three hours the Mehtar and his leading men came and laid before me the affairs of their state; and certainly, when we bear in mind the necessary ignorance as well as the remoteness of these tribes, it was remarkable to hear them state their case and conduct a conversation with as much dignity and good sense as these men did.

Colonel H. C. B. Tanner: The most prominent peaks of the Hindu Kush were observed and trigonometrically fixed by myself from points in Gilgit averaging from 17,000 to 17,400 feet in altitude, but sufficient suitable stations were not available in the small tract of country I was allowed to visit for fixing all the most lofty mountains seen. That slide with very dark clouds and white snow represents a peak the position of which is unfixed, having been observed from one point only. I wrote to Dr. Robertson about it, but unfortunately he is so far away that I have received no reply. It seemed to me to be on the continuation westward of the Hindu Kush range in the direction of Kaffiristan, and in the neighbourhood of Tirach Mir. I should say it must be over 24,000 feet high, and sufficient to give rise to very large glaciers.* Dr. Robertson had no means at his disposal of fixing with accuracy the highest mountain ranges in Chitral and in Kaffiristan, but when the cloud has blown over and our forces have visited Chitral, no doubt surveyors will follow, and by-and-by all the undefined part of the map now before you will be cleared up. It is for the Geographical Society to continue their efforts to see that accounts of these interesting tracts are brought to us. The vast numbers of languages spoken there render the country one of the most interesting in the world, and although Dr. Robertson has done a great deal, and Captain Younghusband is still at work, it will be very many years before we have cleared up all the more interesting points yet to be determined. I trust, therefore, that our interest in the country round Chitral and Kaffiristan may not cease because a few explorers have already been there.

The President: It is so short a time since Mr. Robertson charmed an audience in this hall by his most interesting account of his sojourn in Kafiristan, and we were all so much interested in what he said, that we cannot but feel very anxious

* Tirach Mir, seen first by Colonel J. Biddulph, is 25,400 feet high; two other points to the eastward, and on the main ridge of the Hindu Kush, are over 24,000 feet. The unfixed peak of Colonel Tanner may probably be near the Doráha or Nuksán passes.

now that he is in danger, or that, at least, he is in a state of isolation. We must all, therefore, have listened with deep interest to what Lord Roberts has told us of the march by the Swat valley from Peshawur to Chitral, which, I believe, is only 186 miles, and two-thirds shorter than the route usually taken. Perhaps it is not too late this evening to ask General Walker if he will give us some account of what he knows in a little more detail of that route from Peshawur to Chitral.

General J. T. Walker: I am very sorry I can give but little information. It is thirty years since I was employed on the frontier of Peshawur, and it is to be hoped that our officers there know a little more of the regions beyond now than they did in my days. I sincerely hope that Lord Roberts is correct in his anticipation that our army will be able to march from Peshawur to Chitral; but it is a very difficult country to traverse. I am not aware that any Europeans but one, Mr. McNair, an officer of the Survey, has been through it. It is a country without roads and with various difficult passes, and I am afraid that General Low has a very arduous task before him; but I can only hope that he will be successful, and will not only relieve Dr. Robertson, but that we shall be able to acquire permanent influence over the whole of the intermediate country. This will be certainly an enormous advantage in the management of affairs up in Chitral, as it will open out the direct route to that country, which is so much shorter than the route which has at present to be taken.

The President: I remember, when Captain Younghusband read his first paper in this hall in the year 1888, that Sir Henry Rawlinson, our lamented president, joined in the discussion, and he said that the name of Younghusband would always be in the first rank amongst explorers who had found their way over the great plateau of Central Asia. Since that time our gold medallist has worked hard in the same geographical field, and has explored the northern side of the Karakoram range and the Pamirs, and, as we have heard to-night, Chitral and Hunza. He has already communicated to us three papers, and the present one, like the two former papers, is valuable from a geographical point of view, is charmingly written, and most interesting. When I propose a vote of thanks to Captain Younghusband, I feel sure that I shall carry it with acclamation. And we must not forget to thank Colonel Tanner, who has contributed so much to the interest of the evening by his pictures.

Note on Map of Chitral.—In the map to illustrate Captain Younghusband's paper on Chitral and the adjacent countries, the part north of lat. 35° 30′ N. has been taken from the "Map of the Pamirs," compiled at the Intelligence Division of the War Office. The part south of this parallel has been taken from the "Map of Afghanistan," published by the Indian Survey Department, with additions furnished by Captain Younghusband.

THREE YEARS' TRAVEL IN THE CONGO FREE STATE.*

By S. L. HINDE, Captain in the Belgian Service.

Having been appointed to the Congo Medical Service, I landed at Boma in December, 1891, and went up to Stanley Pool. Thence I was sent to the district of Lualaba, commanded by the Baron Dhanis, and on arriving was immediately ordered to join an exploring expedition to Katanga.

* Paper read at the Royal Geographical Society, March 11, 1895. Map, p. 512.

Our force consisted of 350 regulars, one Krupp gun, and porters. While on the road to Katanga, information reached us which sent us full speed to the Lomami to stop a raid of Arab slavers. It turned out that the raid was nothing less than the advanced guard of an invasion in force, aimed at the overthrow of the Congo Free State and the obliteration of the white man's influence in Central Africa. So it came about that for two years from this time, I acted as combatant officer in a war between the state and the federation of Arab slave-traders on the upper Congo and its tributaries, who, since the overthrow of the Falls Station in 1886, had established a power which was to all intents and purposes an independent rival of the Free State, although not so indicated on our maps.

Towards the close of the campaign I received orders to survey the Lualaba and Lukuga from the neighbourhood of Kasongo upwards. The United States commercial agent, Mr. Mohun, obtained leave to accompany me. This mission was successfully accomplished as far as M'Bulli's on March 6, 1894. It will be remembered that the river below Kasongo had been explored by Stanley and by others since his time, and that the Lukuga from Tanganyika as far as M'Bulli's had been made known by Thomson and Delcommune. My work, therefore, was to connect the surveys of Thomson and Delcommune with those of Stanley and his successors.

The journey up the river from the coast by Leopoldville to the station of Lusambo on the Sankuru has been frequently described. The path from Matadi up to Stanley Pool is now so far a made road that there are bridges over most of the rivers, and the pathway is cleared of trees and all large obstructions. Shelters have been built at intervals of three hours over the whole distance. The porters employed for the carriage of goods belong to the Manyanga and kindred tribes. There is a marked difference between these people and the carriers used by the Arabs in the Manyema district. The latter are slaves, forced to work, but fed on a sufficient meat diet. The former are free men, but indifferently nourished. The Manyemas are able to carry 80 or 90 lbs. without much difficulty, while the Manyangas are rarely up to a burden of more than 60 lbs.

Leopoldville, on Stanley Pool, I found very short of food. I have since heard that this was due to the chief Galyema, with whom Stanley made the agreement permitting the state to establish the station. About a year and a half ago the commissary of the district drove him into the French territory, and since that time there has been no difficulty, unless it be the prevalence of high prices, in the feeding of the garrison at Stanley Pool. Sickness is at all times very rife at the Pool, and is due partly to the inexperience of the new arrivals from Europe on their way up country, and partly to the carelessness of the time-expired whites, who, coming down from the interior

at certain seasons, fail to clothe themselves sufficiently, and over-drink and over-eat whilst waiting for their caravans to be made up. I may mention that while I was at Stanley Pool there were one or two disturbances in the neighbourhood. I was lucky enough to be appointed to the expedition which quieted them. The officers of the district were very much surprised at the richness of the country within two or three days' march of their station. The fact is that the transport service is so large and so undermanned that the commissary of the district of Stanley Pool has never had time to learn his own district.

After three months spent in the district of Stanley Pool, I got my instructions to proceed to the district of Lualaba on the Sankuru. I left Stanley Pool in the *Stanley*, with 500 soldiers and porters. After four days' steaming we reached the mouth of the Kasai, up which we turned. We were now in the land of plenty. Goats could be bought for a handful of blue beads, or for cloth or handkerchiefs, *if blue*. Wood for the steamer was difficult to obtain, the edge of the forest being usually a mile or so from the river-bank. Sometimes we steamed a whole day without being able to replenish our stock. The marshes and grassy plains along the river border, and the sandbanks and islands in its course, literally teemed with game. There were vast flocks of egrets, pelicans, geese, and many other species. On one occasion we counted 230 hippopotami in a line, looking like a ridge of black rocks. The Kasai natives seem to be dangerous. We had several fights with them on account of their stealing the men's axes or attacking the wood-cutters during the night. On several occasions when we were passing close to the land, at points where the scrub on the banks was sufficiently thick to hide them, the natives fired into the steamer with arrows and muskets, apparently from pure love of mischief; for, at the time of which I am speaking, there had not been enough traffic on the river for steamers to have given general cause of quarrel.

The crew of the steamer consisted mainly of Bangalas, of whom Ward has written much in his 'Five years among the Congo Cannibals.' They dress their hair fantastically, allowing one or more pigtails to grow a foot long, and stiffening the plaits with wax, making them stand up, and look like horns; they also cut and recut the skin from the root of the nose upwards to the hair, the cicatrix thus formed being often an inch high, and resembles a cock's comb. Their behaviour on the steamers is splendid. They are at once hunters, soldiers, and sailors, but cannibals. When the steamer approached the bank with the intention of mooring, two or three of them would tumble overboard, hanging on to the flukes of the anchor, run along the bottom in 3 or 4 fathoms of water, and, coming up at the bank, hook the anchor into the root of a tree. After twenty-two days' steaming, we arrived at

Benabendi. This is the Belgian Commercial Company's station, where the Sankuru joins the Kasai. Three years ago this was the only station on the Kasai. At the present minute, I believe, there are fourteen belonging to different companies. We now turned from the racing Kasai to the placid Sankuru, whose banks, in marked contrast to those of the Kasai, are clothed with forest to the water's edge. At the time when we went up the Sankuru there were no stations upon it. There are now twelve engaged in the collection of enormous quantities of indiarubber. It seems to me there is a variety of hippopotamus in the Congo basin which does not grow larger than an Alderney cow, and yet the adults are much larger than the dwarf hippopotami, of which there is a specimen in the British Museum. Unfortunately, I have not a specimen to show. In the Sankuru I saw a herd of twenty-three, and in the Lualaba below Riba Riba, a herd of eighteen small hippopotami.

The Sankuru water-people, called Bakuba, are not nomadic; they are a fine race of traders and farmers. Their houses, about 20 feet high, are well built, beehive-shape, thatched with grass to the ground. They make a very good kind of canoe, flat-bottomed, the sides about 10 inches high, tapering to a point fore and aft. Their paddles are about 9 feet long, and well made; many of their paddles have a small knob at the upper end, which is held in the hand. While paddling they chant and take a step forward as they catch the beginning of the stroke, and draw the foot back as they pull through. Ten or twenty of them paddle the ordinary canoe, and keep the most perfect time. The women wear cowries in their hair, which they also plaster with reddish paint and grease. The men and women wear a strip of palm-fibre cloth from the waist to the knees.

Ten days more of steaming took us to Lusambo, the capital of the Lualaba district, situated, according to Lemarinel, in 23° east longitude, latitude 4° south. The station is built on a sandy plain on the right bank of the Sankuru, opposite the mouth of the Lubi, and was founded to check the Arab advance from the east. It consisted of a garrison of 13 white men and 400 black soldiers. There having been little fighting, the whole station had been occupied for two years in making large plantations of cassava, maize, and rice, which were in splendid condition, the station being self-supporting. Here I reported myself to the Commandant Dhanis, who had just returned to the station after having defeated the Arab slave-raider, Gongo Lutete. The *Stanley* had brought up orders for the despatch of an exploring expedition to Katanga, and I was at once directed by the commandant to join the caravan, which consisted of seven officers (white men), 300 soldiers, and 200 porters, besides camp-followers and women. The commandant himself took command. Each of the seven officers had three trained bulls to ride, which eventually served for food on the road.

We started on July 17 for Pania Mutumba's village, three days'

march from Lusambo. Crossing the Sankuru, we marched up its left bank through an extensive forest, in every part of which were wild coffee, indiarubber, and elephants. Pania Mutumba is a very rich village of about 3000 inhabitants, well built in straight lines. The huts are square, but have roofs of the ordinary beehive shape. They are larger than usual, being 30 or 40 feet high, and 15 feet square on the ground. Crossing the Sankuru, we marched for five days south-eastwards to Mona Kialo's, finding practically no food on the road. The vacancy of this district, devoid alike of men and food, had been created by slave-raiders in Tippoo Tib's employ. Every height was covered with splendid palm plantations, and with the remains of villages, whose precise extent was indicated by the bomas or palisade fortifications, which had taken root and grown into ring fences.

Two or three hours beyond Mona Kialo's to the eastward, we came on two villages in clearings, freshly constructed, and inhabited by Batwas or pigmies from the surrounding forest. In reply to a call from the guide Mona Kialo had given us, about 100 of the dwarfs, men and women, came round us. Their average height was about 3 feet 9 inches. I am not sure that the existence of the pigmies in this district has been previously mentioned. On this occasion our little friends were uninterestingly peaceful, but at a later time we learned to know them in other moods. It is a curious fact that they are not afraid of fire-arms; they drop when they see the flash, then run in and spear or shoot their opponent with arrows, before he has time to reload.

Our caravan did not suffer from hunger, for Commandant Dhanis had allowed every man to take at least one woman and a boy with him as transport and commissariat. Immediately beyond the last dwarf village we came to the Lubefu, an extremely rapid stream 200 yards wide, which it took the caravan two days to cross. The water was at this time red, a small tributary higher up, which flows through red clay, being in flood. At this point ambassadors came to us from Gongo Lutete, with a message that, as he wished for peace, he would like the white man to come and visit him. Commandant Dhanis decided to do so, although at a cost of a long deviation north-north-east from the direct road to Katanga. After four days, we were met by a large present of food from Gongo Lutete, and halted at Mulenda's, on the Ludi. His town had a splendid boma, made of trees 30 feet high, most of them garnished with human skulls in various stages of decay. Having recruited our caravan with a couple of days' rest, we went on three days further to Gongo's capital, N'Gandu.

Among the hills, about four hours' march from Mulenda, on the Ludi, we found a small circular lake of about a mile in diameter. This lake is supposed by the natives to be haunted. They say that it is dangerous to sleep near it, drink of it, or bathe in it. Thanks to this superstition, it is inhabited by two of the largest solitary bull-hippopotami I have

ever seen. The water of the lake is perfectly pure. On a subsequent occasion, many of our people drank of it and bathed in it for a couple of days without any ill effects. N'Gandu was a fortified town by the river-bank, with four gates, each approached by a very handsome pavement of human skulls, the bregma being the only part showing above ground. I counted more than 2000 skulls in the pavement of one gate alone. Almost every tree forming the boma was crowned with a human skull. Gongo Lutete had himself been a slave, but was now become one of the chief slave-raiders. He had gathered together about ten thousand cannibal brigands, mostly of the Batetela race.

Through the whole of the Batetela country, extending from the Lubefu to the Luiki, and from the Lurimbi northwards for some five days' march, one sees neither grey hairs, nor halt, nor blind. Even parents are eaten by their children on the first sign of approaching decrepitude. It is easy to understand that under the circumstances the Batetela have the appearance of a splendid race. These cannibals do not, as a rule, file their front teeth, nor do they tattoo the face. I explored the Lomami for some six or eight hours above N'Gandu. The river is about 200 yards wide, rapid in many places and rocky, and navigation even in a canoe is very difficult. Northwards, eastwards, and southwards of N'Gandu extends a vast palm forest, containing great patches of indiarubber creepers.

We were regally entertained for a month at N'Gandu, at the end of which period Gongo Lutete said that he would leave the Arabs and come over to the white man if we would keep faith with him, and, in proof of his own fidelity, he gave us a large present of ivory. He then told us that the Arabs had massacred Hodister's expedition and the white Pasha from the East, whom we guessed to be Emin. He added that they had also succeeded in killing Stairs and Delcommune, but this was, of course, incorrect. Leaving a post with two officers at N'Gandu, we resumed our march towards Katanga, following the ridge of the watershed between the Lomami and the Lubefu. We passed the Two Mountains, seen from a distance by Wissmann. Seen from a point a mile away, it is almost impossible to believe that one of them is not a castle built by human hands, the vast square blocks of grey rock having all the look of old masonry. During this march we came across hundreds of human skeletons—according to our Batetela guides, the victims of a small-pox epidemic. But there were bullet-holes in the skulls, and the epidemic had probably been a Batetela slave-raid. After six days' march we arrived at Kabinda, Lupungu's capital. At this point Dhanis was obliged to return to Lusambo.

Lupungu is the great chief of the Balubas, with an influence extending to the Lulua, and southwards to the Katanga. The Balubas in this district are olive-coloured, with thin lips, and, even from a European point of view, are good looking. The Balubas, who all file the upper and lower

incisors, were not cannibals a short time ago, but of late years the men have learned to eat the enemies who fall in battle; as yet the women have not taken to this revolting practice. Kabinda is in 6° south, and 24° 35′ east. It is built on a hill. The chief industry is the making native cloth out of palm fibre. Pieces of this cloth, about 18 inches square, called Madebas, serve as money at Kosongo, on the Lualaba, where there are no palms. Iron is also a source of riches to these people; some of their work is beautiful, particularly the axes and arrow-heads. We hunted and shot in this neighbourhood, and found that the Lukassi, a tributary of the Lomami, discovered by Wissmann, rises in a lake about 12 miles south of Kabinda. This lake is very full of hippopotami, though only about 2 miles square.

Food being scarce at Kabinda, Lieut. Scaerling and I led the men along the course of the Lurimbi eastwards to Kolomomi's. Here we received a letter from Captain Lippens, the Belgian resident at Kosongo, confirming the report of the murder of Emin Pasha and of Hodister, saying that he and his assistant, Debruyn, were captives, and that Sefu (Tippoo Tib's son), although holding a commission from the king of the Belgians as commissary of the district, was marching to murder us with 15,000 guns. We at once decided to try and stop Sefu crossing the Lomami, and by forced marches arrived at Goimuyasso's, on the Lomami, having heard that it was there that he was going to cross. The Lomami at this point is 200 yards wide, and very rapid. The canoes in use here are simply hollow logs, and are pushed with a pole, the natives on the Lomami not having learnt the art of paddling. We kept Sefu in check for six weeks, until the commandant arrived with reinforcements. Curiously enough, the very day after his arrival we found that Sefu had crossed the Lomami twelve hours' march below us at Jigge. Here we defeated him. A panic seized the Arabs, and the whole host jumped into the river, leaving about 600 dead on the field of battle, and some 1500 more were drowned. The whole country rose in our favour; Kolomoni and Lupungu joined us with 2000 guns and 5000 bowmen and spearmen, and followed the Arabs across the Lomami. At the same time the commandant sent a column from N'Gandu to accompany Gongo Lutete, and join us at Lusuna. We marched for three weeks over the tableland of Kabamba. This country is all swamps, and we had a nightly difficulty to find a dry place in which to pitch our tents. When we started from the Lomami we left all baggage behind, and trusted to the country to feed us. We were without anything European, and subsisted on the goats' flesh and rice which we took in some skirmishes. The Arabs had cut down all the limes, bananas, and other fruit-trees, and had devastated the country with the object of starving us out.

It is a remarkable fact that during the whole of this march through stinking swamps, when we were repeatedly immersed to the waist and

the neck for hours at a time, and this at midday of the hottest season of the year, there was not a single case of fever either among blacks or whites. May this not be explained by the fact that we were away from the forest shade, and that the sun's light could play with full bactericidal power on the surface of the marsh?

Arriving at Lusuna's, a town described by Cameron, we joined forces with Captain Michaux and Gongo Lutete, who had already captured the place. Cameron's Lusuna had died about ten months beforehand. We were told that when he was buried they cut the throats of 100 men and placed them in the grave, laid the chief's body on the top of them,

NYANGWE.

threw in 100 live women, filled up the hole, and built a splendid house upon it. The house was burnt with the rest of the town after Micheau's attack. Here we counted our forces. We found that Gongo Lutete had over 2000 guns with him, and Lupungu and his tribes over 3000. Our regular force consisted of 400 drilled coast-men and their women. Lupungu was afraid to advance, saying that dysentery and small-pox were rife in the Arab country, so we sent him home with all his people. Here, too, we heard that Muni Mohara, the chief of Nyangwe, was marching against us with 12,000 guns. This was an exaggeration, for when we exterminated his band, we took only about 5000 guns. News also came in that Sefu, after his defeat, had murdered his captives, Lippens and Debruyn. From Lusuna we followed Wissmann's route towards Nyangwe. At Goio Kapopa, at the junction of the Mwoida and Lufubu, we fought several battles, in the first of which Mohara was killed. We advanced to the Lualaba, and came in sight of Nyangwe on January 28, 1893.

All the country between the Lufubu and the Lualaba is salty. I examined some of the salt marshes, and in two of them found the brine coming out of the ground, warm. Sections exposed in the banks round the marshes showed slate above a kind of marl. In the centre of one marsh I found a hot sulphurous spring, with a temperature of about 120°. The natives boil the brine, and obtain a salt black with mud. We encamped for six weeks in the swamps described by Cameron on the left bank of the Lualaba, opposite to Nyangwe. The Arabs attacked us on several occasions, and we exchanged shots daily across the river. At this time we were living in the swamps and drinking the swamp waters, but did not suffer from fever. During the whole war we were in constant communication with the enemy, and even with natives of the district whom we never saw, by means of the drum telegraph. We had no difficulty at night in talking to the friendly natives 5 and 6 miles off. There seems to be a fairly well-known general code, though each tribe, and often each chief, has a special code. On several occasions our chiefs signalled to some of their own people, at the time Arab prisoners or wives, telling them when and where to desert to us, which they did successfully.

On February 26 the Arabs attacked us in force, and were defeated. This had such an effect on the Waginia, the river people, that they came and offered us their canoes to attack Nyangwe. With one hundred dug-out canoes, we took Lyangwe on March 4. It was a finely built Arab town of about 25,000 or 30,000 inhabitants. We there found papers and clothing which had belonged to Emin Pasha. He had been killed at Kibungi, on or about October 23, 1892. It is worthy of note as proving a premeditated scheme, that the details of his death, with the names of the chiefs who killed him, had been reported at Zanzibar in June, 1892.

The third day after the taking of Nyangwe, the Arab soldiers and allied chiefs came in in great numbers, offering submission, voluntarily surrendering their guns, and saying that the Arab power was ended. We gave them quarters in the town, believing in their good faith; but two days afterwards we found that the whole town was filled with armed men. For every gun which had been given up, a dozen had been brought in by night and hidden. The plan, as we afterwards learned, was that Said-ben-a-Bedi, the chief who conducted Emin from Lado to his death, should camp at two hours' distance from Nyangwe with his army, with the object of supporting those in the town who had made apparent submission, when they should fire the place and attack us. By some lucky chance the attack was made at midday, and not at midnight as had been arranged, and Said-ben-a-Bedi failed to bring assistance. As a consequence the revolt was stamped out. Over 1000 men fell. Next day I had the direction of the burying-parties, but only found a few hundred heads and bones; the camp-followers, friendly

and other natives had carried off all the meat, and in many cases the whole body, for food. As far as I have seen, the African cannibals never eat flesh raw; they always boil or roast it. After four hours' street fighting, Nyangwe was burnt, and now there is only one house left, which has become a state station, and around it are springing up native villages and plantations of coffee, rice, and cassava.

At Nyangwe the Arabs sent their sick people into our camp, thereby causing an epidemic of small-pox. At the same time there was raging the most virulent form of influenza that I have ever seen. During the many months' hardship preceding this, we had had no deaths with the exception of one from pneumonia, one from heart-disease, and the killed in battle. This, as I have before observed, was probably due to the

WAGINIA VILLAGE.

fact that the men were well fed and cared for by the women who accompanied them.

On April 16 we were joined by the first reinforcements. On the 19th we marched on Kasongo. Our way led through a splendidly fertile and entirely cultivated country. We stormed Kasongo on April 23. Kasongo was a newer town than Nyangwe, better built, and apparently very rich. We took great numbers of repeating and other rifles, and tons of gunpowder, besides sugar, vermicelli, sardines, raisins, and other European delicacies. Kasongo seems to have had a population of about 60,000. The streets were fairly straight; there were bridges over all the brooks, and wooden conduits for the drains. The whole country round for 5 or 6 miles was one vast cultivated field. I rode through one rice-field in a nearly straight line for two hours.

Kabambare was taken on February 13, and Rumaliza, the chief of Ujiji, fled to Tanganyika, and probably across it. Thus the last hold of the slavers to the west of Tanganyika was destroyed.

On returning to Kasongo, the country now being quiet, I got instructions to try and find a road from Kasongo, by water, if possible, to Lake Tanganyika, the caravan road by Kabambare presenting so many difficulties. The United States commercial agent, Mr. Mohun, had requested to accompany me, and I had orders to assist him in any way in my power, as he wanted to get through to Zanzibar. We started on March 16, and struck the Lualaba, at Ferhagie's village on a com-

FLOATING ISLAND ON THE LUALABA.

manding bluff, just below the first of the Kasongo rapids. Here we managed to obtain twelve canoes. We pulled up the rapids, and stopped at Luntumba's, on the left bank, the country we passed being low and rich. It had been cultivated by the Arabs. The river was very fine above the rapids, running like the tail of a mill-race for several miles. Twenty minutes above Luntumba's village we came to other rapids, through which the natives dragged our canoes. These natives were Waginia, already spoken of in connection with the taking of Nyangwe. They attached creepers to the canoes, and sixty or seventy men dragged them one by one up the rapids. In one place I calculated the fall to be about 20 feet. Several of the Waginia were carried down, but, as they swam like fish, seemed none the worse for it. These Waginia are a nomadic race; they never fight, and in fact never carry even a spear in their canoes when travelling, as they used to say themselves, "If we

have done wrong, kill us; we are only women." As may be imagined, they are great liars and clever thieves. The Arabs had taught them to work for nothing but their food on the voyage. They build little huts about 6 feet high, with nearly flat roofs of grass or banana leaves, the walls either made of grass or wattles daubed with mud. They live by selling an inferior kind of earthen pot, which they make of river mud, also by fish-trapping. The commonest kind of trap is made like our lobster-pots. Some of them are very large; I saw one 8 feet in diameter. They do not make their own canoes, but buy them from the forest people. The rocks in this second series of rapids are dark in tint, in places nearly black, and streaked with deep red. They are very rich in iron—so much so, that all this day our compasses were of no use.

NATIVE CANOE ON THE LUALABA.

In going 20 yards in a straight line, with no rock visible above the water, the needle would turn halfway round the box.

Immediately above the second rapids the Lualaba, here a mile wide, is joined on the right bank by the Lulindi. In the upper angle formed by the Lualaba and Lulindi, are fine mountains covered with forest called the mountains of Bena Twiti. We had been fighting against Rumaliza in these mountains some months beforehand. Some distance higher up, the Lualaba is joined by another tributary from the east, the Luama. Between the Luama and the Lulindi the main river describes a right angle, flowing westward to the village of Sekabudi, then northwards to the confluence of the Lulindi. We camped on the left bank of the Luama, that river at its confluence with the Lualaba being about 250 yards wide, with a very rapid current. On the right bank of the Luama the mountains of Bena Twiti seem to be about

10 miles distant. Passing two more small rivers on the right bank, the Kasima and the Kalambija, we came to the rapids of M'Toka. These rapids were formed by a whitish rock, which broke up the river into small streams. The main current was about 100 yards wide, churned into a froth, and apparently not very deep. The difficulty of seeing the banks and of following the course of the river made it impossible to say what was here its exact width; but I should think that, from the mainland on the one hand to the mainland on the other must be about 2 miles, but a great deal must depend on the season. We saw large flocks of geese and some hippopotami here. The mountains on each side of the river up to the next falls are called Simbie; they are not very high, and are thickly wooded. They commence about a mile from the river-bank on either side. After having ascended these rapids in the same way as the others, we arrived at Mutetele. The Lualaba here narrows, and just above the falls is not more than 100 yards across. From here we could see high blue mountains to the south-west, apparently about 20 miles off. One of these is now called Mount President. It was of a curious shape, something like an elephant, the head pointing eastwards. Enormous quantities of geese and duck were shot, enough to feed the whole caravan. Palm trees were fairly common, though the natives refused to give us palm wine, alleging as the excuse that it was habitually stolen by the elephants.

At the falls of Simbi the native chief, Tamwe, had a couple of hundred men ready when we arrived, to haul us up. The natives at this place were very kind, probably wanting to get rid of us. I have always noticed that the natives are generous, hard-working, and obliging, wherever they have been raided by the Arabs. Presumably, they have found that the simplest way of getting rid of visitors is to help them on their road. The Lualaba here narrowed considerably. The river-banks were thickly wooded, and there seemed to be large numbers of buffalo on the plains. The hills were only 200 to 300 feet high, and commenced about a mile from the river-side. The river itself varies from 100 to 200 yards wide, is very rapid, and has a rocky bottom. When the river is very full, it is evidently at least 400 yards in width, and deep enough to cover all the rocks. Palm trees abound, but natives are scarce, this country having often been raided in days gone by.

At the top of the rapids we got to the village of Fambusi, where there is a sort of pool. It is a pool, not a lake—a mere broad in the river. The mountains are wooded, and are covered with game. The grassy plains run for about 2 or 3 miles inland from the river-banks. The natives here are of a new race, the Waujabillio. They speak a dialect of the Batetela language. Here, at Fambusi, we saw the elephant-like Mount President, about 20 miles off to the westward. In the next three hours the river was not difficult of navigation. Then we came to

fresh rapids, where I saw, for the first time, a lot of grey plover, and also large flocks of wild geese, which were very acceptable to the caravan. We slept in the villages of the Waujabillio. These villages are irregular in plan, and composed of houses each consisting of two rooms—a front room about 6 feet square, and a circular room in rear about 8 feet in diameter. The walls are of clay, and the roof is thatched in beehive shape. They are infested with vast numbers of remarkably tame rats.

The whole district from Kasongo to Fambusi had been more or less devastated by locusts. At Kasongo our Arab prisoners and the friendly natives said that this was the first time that they had ever visited the country. The locusts were travelling south-south-east for about a month, while I was at Kasongo, and it is significant that Commissioner Johnston mentions in his report that his country was visited by locusts about two months later.

The next rapids were those of Lukalonga, formed of dark-coloured rocks. In the middle of the river there was a very large island, thickly populated by a settlement of a vassal of Sefu's. We arrived here on March 23, and were told that this was the last point at which the Arabs had posts. We went on to Kinsali, and thence to Kufi. The country seemed very thickly populated here, having, I suppose, never been raided. The forests came down to the river-banks. There were enormous troops of monkeys. To the east, apparently about 10 miles off, were some very fine mountains. This stretch of the river is about 1 mile wide at high water, not improbably 2 miles if the grass islands be included. The next reach of the river came from the westward, with very high mountains on the left bank. This stream was free from rapids, very slow, and apparently very deep. I found no bottom at 35 feet.

We passed the mouth of the Mukalli on the right bank. It seemed an insignificant tributary. In the angle between the left bank of the Mukalli and the Lualaba there was a high range of hills, and here the rapids began again. After working up them for many hours, we came to a specially difficult one called Nyangi. The fall here cannot be less than 15 feet. There is a curious cone-shaped rock in the middle of the river, about 40 feet high, apparently of white quartz, and on both sides of the river are enormous blocks of quartz, while on the left bank is a cliff of quartz about 90 feet high. This bit of scenery is really magnificent. We camped on an island, which seemed to be a solid block of quartz, with only scrubby grass growing on it. This island is called Katenge, after the chief who owns it, and is about 3 miles long, and from half a mile to a mile wide.

We had great trouble with the natives here. After we had worked all day to make an advance of three-quarters of a mile, Katenge refused us food, and was very savage. He even asked us what our guns were for. Being on an island, we should have starved, but that my men were

fortunate enough to catch a cat-fish weighing 100 lbs. We had further difficulties when we left, for the chief would find us neither canoes nor men. We were now beyond the Arab influence, and the natives had not been educated—hence our rough experience. When at last we got started, we found the country very thickly populated, all the people turning out in thousands to see us off. Katenge's boatmen turned over one of my boats in a rapid, as I believe, on purpose. I was looking on, and lost eight men with their whole kit, including cartridges. Kongolo, the great chief in this region, had apparently given orders that we were not to proceed. The paddlers told us that it was impossible to mount the rapids, but we succeeded in persuading them to do so, despite the impossibility. We found Kongolo's village at the

WATER-WORN ROCKS ON THE LUALABA.

head of the rapids, where the river forms a pool, and looks almost like a lake. Kongolo was not pleased to see us, and bolted; but my men caught him, and invited him to dinner, which he eventually provided for us. We were told that there were no more rapids; that we could travel for three weeks or a month up the Lualaba without finding any obstruction. I am sorry I could not verify this; but it is probably not true.

We now paddled for a couple of days past islands, the stream running only about two knots an hour. As far as we could see into the interior, village followed village, the river-banks being densely covered with people, brought out by curiosity to see the white man. They were a fine race called Jambulus, fairly well clad in native cloth, the hair of the men being arranged fantastically in various forms. There were two splendid ranges of hills, one on each bank of the Lualaba; those on the right bank are called Muambo, and those on

the left bank Kaloni. As the people speak a bastard Batetela, which we could not understand, it is possible that these are not the names of the mountains at all, but only those of the chiefs of the districts.

The Jambulus excel apparently in carving. At Katulu we found some very fine carvings, some cut from the wart-hog's teeth, and some in ivory. There were an enormous number of fetishes hung round the people's necks, teeth and ivory. The axe-handles and paddles were also very well carved in wood. The people do not seem ever to have seen a gun here, or to know what it means. When my men were in line on one occasion, twenty men armed with bows and arrows ran in on us, thinking we were only armed with clubs. All the arrows are poisoned, but the poison does not seem to be invariably fatal, since one of our men who was shot through the thigh recovered.

On the 31st we came to the mouths of the Lukuga, which form a delta. The northern mouth is about 30 yards wide, the southern about 80 yards. The latter has a very rapid current. The Lualaba at the confluence with the Lukuga is about 400 yards wide, and about half a mile higher must be nearly a mile wide. It runs in the direction north 20° west for several miles, and there is no sign whatever of Lake Lanchi, which is marked on so many maps. The Lualaba runs from the mouth of the Lukuga southward, and is so straight that, except for a few palm tops, sky and water touch at the horizon. As soon as we got into the Lukuga, the natives told us this was Tanganyika water. This is interesting, as I see Mr. H. H. Johnston has said that he has never been able to find any natives who call Tanganyika by its name.

The Lukuga above the delta is about 10 feet deep, and was at this season perfectly clear, varying from 1¼ mile to 1 mile wide, with the same depth right across. A great deal of it had long grass growing in it. There was no sign of swamp about its banks. Some miles up we were blocked by grass, but we could follow the course of the river by going against the current, though we could not see the banks. After 3 or 4 miles through the grass, we got an open stretch of water 40 yards wide. The whole expanse of water from bank to bank was about a mile. We stopped at a village called Angoma. The country is very densely populated, but the people did not seem to know anything about the Arabs. They speak a kind of patois of the Batetela language, which a man from Lusuna, in Malela, whom we had with us, could understand. Some hours below M'Bulli's we paddled through the largest flock of birds I have ever seen; the river and river-banks, the islands and plains, as far as the eye could see, were literally covered with spur-winged geese.

We reached M'Bulli on the 5th, where I was taken ill. Opposite M'Bulli there was a high range of hills, which seemed to grow higher towards the east. Delcommune had passed by M'Bulli a year and a half previously. M'Bulli told me that he sent his ivory to be

sold at Tanganyika, a journey of six days. Mr. Mohun here took command of the expedition, and returned down the river to Kasongo. After resting at Kasongo for ten days, the abscess in my liver getting worse, I decided to start down the Congo. After fifteen days I arrived at Stanley Falls, and took a steamer back to Stanley Pool.

In conclusion, I would draw your attention to certain general observations.

1. The political geography of the Upper Congo basin has been completely changed, as a result of the Belgian campaign among the Arabs. It used to be a common saying, in this part of Africa, that all roads lead to Nyangwe. This town, visited by Livingstone, Stanley, and Cameron, until lately one of the greatest markets in Africa, has ceased to exist, and its site, when I last saw it, was occupied by a single house. Kasongo, a more recent though still larger centre, with perhaps 60,000 inhabitants, has also been swept away. It is represented now by a station of the Free State 9 miles away, on the river-bank.

2. In harmony with this political change, the trade routes have been completely altered, and the traffic which used to follow the well-beaten track from Nyangwe and the Lualaba, across Tanganyika to Ujiji, or round the lake to Zanzibar, now goes down the Congo to Stanley Pool and the Atlantic.

3. Despite their slave-raiding propensities during the forty years of their domination, the Arabs have converted the Manyema and Malela country into one of the most prosperous in Central Africa. The landscape, as seen from high hills in the neighbourhood of Nyangwe and Kasongo, reminds one strongly of an ordinary English arable country. There is nothing similar, that I am aware of, in any other part of the Congo basin; and yet the Arabs have left the Malela perhaps the most inveterate cannibals on the face of the globe.

4. In all parts of the virgin Congo forest I have visited, wild coffee is so abundant and so excellent, that we left our tins of imported coffee unopened.

5. The centre of the Congo basin, through which stretch the 1000 miles of navigable river and tributary, is an alluvial plain, rimmed in on all sides by rocky ridges, through which the rivers break at points marked by falls or rapids. At some future time, this vast ring of rapids may become the seat of a corresponding circle of mining-centres.

Before the reading of the paper, the PRESIDENT said: This evening we are assembled to hear a very interesting account, as I am sure it will be, of Captain Hinde's adventures in Africa, and of some important exploring work which he accomplished.

After the reading of the paper, the following discussion took place:—

Major-General Sir FRANCIS DE WINTON: I have listened to the paper which has been read this evening with a great deal of interest, because I can trace the advances that have been made within the last ten years, for I took the first boat up

the Kasai river, the *Stanley*, the first voyage she ever made. Wissmann brought down a large number of the tribe of Balubas from the central part of Africa, and we took them back. We now learn from the paper of this evening of the advances that have been made since that time. It is very natural for us, from our point of civilization, to feel that the Arabs, as they are called in Central Africa, have been the great hindrance to the advance of whatever power we try to bring into their midst for good, but at the same time I think it only just that we should not confound the so-called Arab of the interior with the Arab on the East Coast. Most of those that drift into the interior, at Nyangwe for instance, began as traders, taking up caravans. They are not the true Arab of the coast, but a cross between the native and the Arab, who afterwards turned into slave-traders, and carry on a double commerce in slaves and ivory. On the East Coast I have had a great deal to do with the Arabs, and I found them men who, if dealt with properly and with a right motive, were always ready to meet one halfway. These half-breeds who drift up from the coast into the interior establish themselves at places such as we have heard of to-night, Nyangwe and Kasongo, and while we cannot help some admiration for the centres of civilization which they created, namely, towns of from 30,000 to 60,000 inhabitants, they have brought the curse of slavery into the country, and by its means they established large commercial centres and maintained these big towns which Mr. Hinde has so graphically described. If you permit me a few minutes, I will say a few words upon other points connected with his interesting paper. He spoke of the Lukuga, which runs out of Lake Tanganyika into the Congo, and forms really one of the watersheds of this rather peculiar lake-region. One year when I was at Vivi, where the river was about a mile wide, we tried to find the bottom at 400 feet and failed; this will give you an idea of the immense quantity of water there. Well, that river rose 14 feet in one night during the rainy season; you can imagine the enormous body of water that must have caused that rise. Three months afterwards some steamers which were at Stanley pool at the time reported that the great lake had broken out. This is interesting, as Tanganyika has no other outlet except one, the Lukuga. In that region aquatic vegetation grows fast. Grown in the lake, it draws towards this inlet and dams it up. When Stanley went there two years after finding Livingstone at Ujiji, he found his former camp 10 feet under water, showing that the lake periodically rises and falls. The water at last bursts through the dam and forms an enormous river, and I believe it was one of those outbursts that gave that rise of 14 feet in one night lower down. Stanley found the banks of the Lukuga giving evidence of very extraordinary floods, as if immense masses of water came down at different periods.

The other point is with reference to what is known as the Congo Free State. If you remember, the second map that was shown to you by means of the magic lantern gave the navigable portions of the different rivers. Now they are building a railway from Matadi up to Stanley pool, a distance of about 230 to 250 miles; about one-third of it, up to Banza Mateka, is finished, and, this portion being built, the railway engineers' difficulties are more or less overcome, because at the commencement they had to break through rough country and had considerable difficulty with rocky obstructions; but that is passed, and now there is only plain country with two rivers to cross, the Kwilu and Inkissi, which they are bridging. I have no hesitation in saying it will be finished in from three to five years, and once that is finished you have the whole of this great horseshoe of the Congo with all its navigable tributaries opened up to trade, with a railway to bring its produce down for the markets of Europe. Now, what does this mean?—and I wish to impress this on everybody interested in Africa, and who desires its development—that

you cannot develop Africa until you get rid of what may be termed human transport. You cannot bring the products any distance without a railway, or some other means of carriage other than on men's heads. If you employ these porters, from a commercial point it cannot pay. This railway, built by the King of the Belgians, or the State if they take it over, will open out all the navigable waters of the Congo and its tributaries. If we were to build a railway up from Mombasa, we should have the whole of this lake and the countries round the sources of the Nile open to our European markets, and until our statesmen feel the responsibilities of this question, and take a sensible and statesmanlike view of the question of transport, the development of Central Africa cannot go forward. When they do we shall open markets for our suffering poor at home and kill the slave-trade, and, by enabling white people to live amongst them, civilize Africa in that way.

Archdeacon CHAUNCY MAPLES: I am afraid it is a far cry from Nyasaland to the Congo, but in African matters I think we should feel inclined to say, "One touch of Africa makes us all akin." There were several points in Mr. Hinde's paper on which I should like to offer a few remarks. For instance, about the locusts: people in England hardly realize the extent of this evil yet, although they have read a great deal about what a tremendous scourge these locusts have become throughout Africa. I think Mr. Hinde mentioned that the locusts visited the Congo previous to the time when they appeared on Nyasa last August, when I remember what a terrible thing it was to see them coming in clouds over us, because we knew what that would mean in a few years' time, and no one could say when or where they were likely to stop. When I left Nyasa the dead locusts were, on some parts of the lake-shores, like seaweed thrown up after a storm, and the stench was so great that it was impossible even for natives to pass by at certain places. They are still spreading, and no one seems able to say what will be the end. If this pest continues, at the end of the year there will be a great cry sent up to Heaven for deliverance from the scourge, and we shall be saying, "Locusts, locusts everywhere, but not a thing to eat," throughout the length and breadth of Africa. Mr. Hinde said something about the inquiries he had made as to when such a thing was known before. I have made inquiries too, and remember when first I went to Africa nineteen years ago, in 1876, the natives used to speak about the scourge that had taken place two or three years previously, that is, twenty-two to twenty-three years ago. I invite your attention to that, because I am afraid in a year's time you will hear terrible stories of the results of this visitation, for the locusts mean famine, and famine means war, and the war means death; first many natives will starve to death, then war will come and carry off many of those whom the famine has not destroyed.

Another point dwelt on by Mr. Hinde is especially interesting at the present time. He alluded to the abundance of wild coffee which he found during his travels. Well, coffee-planting is a new industry in that part of Africa brought so picturesquely before you lately by my friend the Commissioner of Nyasaland, Mr. H. H. Johnston. Nothing more encouraging, from the point of view of commerce and the planters, can be found, for I must not speak here from the point of view of a missionary. There is nothing more encouraging, I say, than to see the coffee plantations in the Blantyre region. I believe myself it will attract a very large number of people out there, and if the leaf-disease does not come, we may expect to see a number of our young fellows, for whom it is so difficult nowadays to find work, going out there, and returning to their friends in ten to fifteen years with (let us hope) a fortune made.

But the evening is getting late, and I am sure you will not have much more patience with me if I dilate on other matters, and there are others here who can

speak so very much more to the point. I hope, for instance, that my friend Mr. Scott Elliot, whose name was mentioned this evening, may be in the room. We came home together as far as Zanzibar, and I learned from him something about his interesting travels. I suppose you all know the great interest of his recent journey, from the geographical point of view, is centred in the fact that he has discovered that the river Kagera, which pours its waters into the Victoria Nyanza, is navigable for a great part of the distance; and I think I am right in saying that if that route can be opened up, there will be a waterway to Uganda, with only eighteen days of land travel. Most of you are aware of the long and tedious journey to Uganda from the coast, but by this new road to that country one would go up the rivers to Blantyre, and so on to Tanganyika, and I think Mr. Elliot told me that five or six days from the north end of Tanganyika one would strike the river Kagera where it becomes navigable. I only mention this because, if he happens to be in the room to-night, it would be a great pity to lose an opportunity of hearing a few words from him.

Mr. Scott Elliot: I should like to point out the enormous effect of the work in which Mr. Hinde was engaged. I found the effect of it at the north end of Tanganyika, and all along its eastern shore. I do not think that people realize that the defeat of Rumaliza has been the turning-point of African civilization. This Arab domination, of which he was the type, involved the corruption, morally and physically, of every native race which it came in contact with, and destroyed all kinds of cultivation and industry. I found instances of that all along my route. The work done by the expedition that Captain Hinde accompanied is, therefore, one of the most important it is possible to conceive. With regard to locusts, I must say I do not hold the generally received opinion. In December, 1893, I first came across these locusts after passing the Mau escarpment, and after that date until the middle of the rainy season in the Shire highlands I came across them constantly, practically everywhere. I spent some little time in trying to understand the conditions that influence the abundance of locusts, and I rather think their presence is due to some special climatic conditions when the eggs are being hatched. I don't think there can be a regular cycle of locust years unless there is a corresponding cycle of climatic conditions. Whether that occurs or not is a difficult question. It is, of course, interesting to me to hear Captain Hinde's paper, because I have recently undergone the same difficulties he alludes to. My own experience is that the native, as one finds him uninfluenced by Arab missionaries, is a much better person than where he has been to a certain extent civilized by these Arabs, although in his own opinion he is then a very much better man.

Mr. Hinde: The cause of the locust pest may be looked for in the fact that the greater part of the Central African basin having been in a disturbed state owing to war for nearly three years, the natives did not burn the grass throughout the whole country, as is their custom in the dry season. The locust larvæ were consequently allowed to come to maturity.

Mr. Delmar Morgan: It is so many years since I was on the Congo that Captain Hinde's interesting paper is quite a revelation to me. In less than twelve years all that immense territory drained by the upper Congo and its tributaries has been explored and opened to Europeans. In my time (1883) but little of the Congo was known above Leopoldville, and there had only been one expedition to the upper Congo. Great as has been the advance in our knowledge of this region under the auspices of the Congo Free State, I cannot but regret that all this exploring work has not been placed under international control, with the view of protecting the native inhabitants from the aggressive conduct of the white man and the raids of the Arab slave-hunter. Whilst in other countries the contact

between the European and the native races has resulted in some good to the latter, in Central Africa, on the contrary, nothing but harm has come of it; and the indigenous growth of civilization, witnessed by the various handicrafts of the people—specimens of which may be seen in the next room—is being stamped out. I must again express regret that the wide and enlightened views of his Majesty the King of the Belgians, who initiated international concert in dealing with Central Africa, have not been developed, and that the aims and views of Livingstone, the best and greatest of African explorers, have not been realized.

The PRESIDENT: Captain Hinde has taken part in an event which will probably be found to be the most important since the discovery of the course of the Congo by Mr. Stanley. The Arab slave-traders seem to have been entirely cleared out of the country. Captain Hinde's independent exploration is also of great geographical interest, in having ascended the Lualaba and completed its exploration as far as the Lukuga. I am sure the meeting will desire me to return him our very hearty thanks for the interesting paper he has given us this evening.

NOTE ON THE MAP OF PART OF THE SOUTH-EASTERN CONGO BASIN.—With the work of the older explorers, whose routes are laid down on the map, has been incorporated material supplied by Captain Hinde, in the shape of sketch-maps made by himself and other officials of the Congo State. The routes covered by these maps are the following: Lupungu—Mulenda—N'Gandu; Kolomoni—Goi Muyassa—Piani Kolomoni—Lussuna; N'Gandu—Lussuna; Funda—Fuanka—Molenda; Lussuna—Piano Chiaba—Lukuna; routes north and south-west of Lusambo. The courses of the Lukuga and Lualaba from Mbuli's to Lukuna are from Captain Hinde's compass-survey, with additions from the survey made by Mr. Mohun ('Mouvement Géographique,' 1894, p. 84). The course of the Lualaba below Lukuna is from Dr. Lenz's survey ('Mitteilungen der k.k. Geogr. Gesellsch. Wien,' 1886, Map viii., scale 1 : 1,130,000).

THE LUCHU ISLANDS AND THEIR INHABITANTS.*

By BASIL HALL CHAMBERLAIN, Emeritus Professor of Japanese and Philology in the Imperial University of Japan.

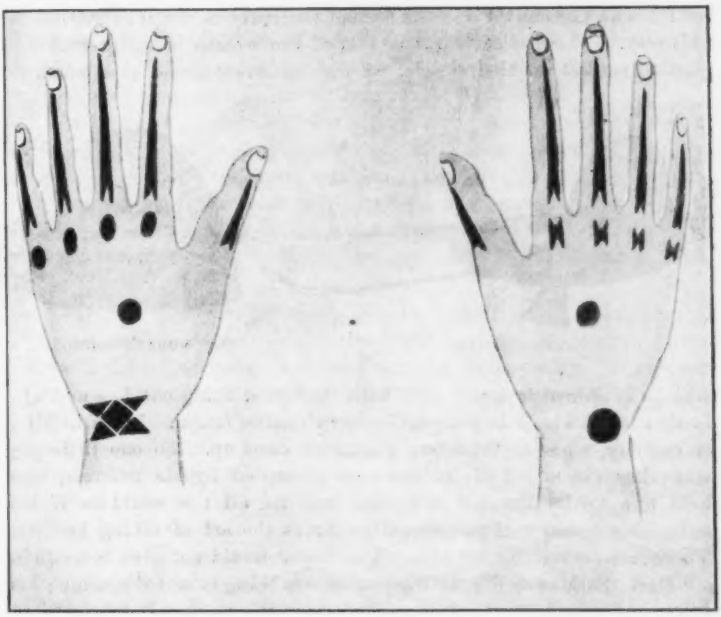
IV. MANNERS AND CUSTOMS OF THE INHABITANTS.

The manners and customs of a people offer so illimitably wide a field, that it will be best in this instance to pass lightly over points made known by earlier travellers, and to dwell at greater length only on such as are new. Both Basil Hall and Perry, for instance, have described the Luchuan costume and illustrated it pictorially in their works. Their descriptions still hold, except that the elaborate robes and caps of office are no more, now that Luchuan independence itself is at an end, and that officials from Tokyo in European trousers and frock-coats rule the land. In essentials the everyday Luchuan costume resembles the Japanese, being a loose robe for the men as well as for the women. The wearing of two large hairpins by the men—gold,

* Paper read at the Royal Geographical Society, January 7, 1895. Map, p. 408 Continued from the April number.

silver, or pewter, according to the wearer's rank—stuck through a topknot into which the hair is gathered, forms a characteristic difference. Young men of all classes shave clean till the age of five and twenty. After that, they let their beards and moustaches grow, though they mostly continue to shave the cheeks. Their gait is dignified, the expression of the face serious, often sad, and sometimes singularly sweet in the older men, whose appearance is most venerable. Their voices, too, are soft and low.

All Luchuan women tattoo their hands. The patterns adopted in Great Luchu are represented in the accompanying engraving. The

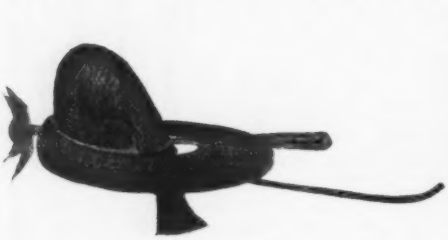


TATTOOED HANDS.

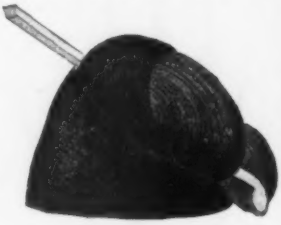
women of Oshima give free rein to individual fancy. Those of Miyako-jima likewise have a great variety of patterns, and continue the tattooing a long way up the arm. In Yaeyama, on the contrary, it is restricted to the hands. The women of the lower classes roll their hair round and round in a twist on the top of the head, and then stick hairpins through it—gold, silver, or pewter (sometimes wood), much less often tortoise-shell * on specially auspicious occasions. The silver-hairpinned ones

* The tortoise-shell hairpins seem not to have been noticed by any traveller, European or Japanese.

also wear silver rings, the pewter dames wear pewter rings. There being nothing to keep the roll of hair with its hairpins in place, it is apt to lop over on one side, making the wearer look as if she had taken a drop too much. Altogether the appearance of the Luchuan women of the people is little prepossessing, especially to one fresh from Japan, the land of graceful femininity. They fasten their dress over from the right side as often as from the left, which is a dreadful slip of manners in Far-Eastern eyes; and in cool weather they don an over-dress held together by no sash, so that it bulges out and sways backwards and forwards in the wind. Their gait, too, is masculine and striding,—a peculiarity which probably arises from the national custom of carrying all loads on the head. A coolie woman will carry as much as 200 lbs. in this way. The drollest sight is that of the women bringing sucking-pigs to market on their heads. A disk of straw serves as a couch to



MAN'S COIFFURE.



WOMAN'S COIFFURE.

which the animal is firmly tied, with its legs sticking out fore and aft, so that it looks as if it were taking a swimming lesson. I was looking on one day, when an intending purchaser came up. So one little pig was taken down and his points were shown off by his mistress, who held him up by the tail and hind legs, for all the world as if his swimming lesson had progressed as far as the art of taking headers. The woman asked $1\frac{1}{2}$ for him. The buyer would not give more than a dollar. So Master Pig, as I departed, was being mounted again on his straw pad, screaming loud enough to raise the town. Did fashion, in her wildest flights, ever go further than in thus adding a sucking-pig to the attractions of a lady's coiffure? Curiously enough, there seems to be a general prejudice in Luchu against allowing animals the use of their legs. Pigs, when too big to be carried on the head, are slung on a pole between two men. Goats I saw similarly carried, and never on any occasion did I see pigs or goats driven, as we should drive them in Europe.

The market-place, which is the centre of life at Nafa, is entirely in the hands of the women, who show no timidity whatever, exposing not only their faces, but their arms and even their legs. This makes the seclusion of their social superiors all the more remarkable by

contrast. The ladies of Luchu spend their lives in a retirement so absolute that I never saw one during the whole period of my stay, though the rustling behind screens when I visited my male acquaintances seemed to indicate that the females of the household were peeping at the foreigner from invisible coigns of vantage. Japanese who have spent long periods of time on the islands have recorded the fact that they too never caught a glimpse of a Luchuan lady. To ask a Luchuan gentleman after the health of his wife and daughters, or to allude to their existence in any way, would be the height of impropriety. Rarely does a lady leave the house which is her lifelong home. Should some extraordinary occasion compel her to do so, she retires from view within a closely shut palanquin. How different from the genial Japanese Prefect of Okinawa, whose very first act, on my first visit, was to call in his charming wife, who showed me her latest purchases of local curios just as a European lady might have done!

The Luchuan gentlemen take refuge from the virtuous dulness of their homes by seeking the society of ladies of more facile habits, the number of whom is very considerable. These live in special quarters, and practise the arts of singing, dancing, and conversation. Here is what a recent Japanese author * says about them, and his assertions were borne out, point by point, by my own inquiries made on the spot—

"The Luchuan hetairae differ greatly in their ways from those of the mainland of Japan. They are frank and no flatterers. Every Japanese trader arriving in Luchu engages one, to whom he entrusts everything, even to the management of his mercantile affairs; and when he departs, the girl sells to best advantage the articles confided to her charge, so that when her master comes back again she is able to render him a satisfactory account, in which there is never any error or prevarication to the amount of a single penny. Moreover, this good conduct is the result of natural inclination, not of self-seeking or of vainglory." He adds that, "though generally unversed either in writing or ciphering, they tie knots in cords to assist their memory, and thus manage without error calculations involving tens of thousands of cash."

These women on certain stated occasions dance through the streets for the benefit of the public generally. One of these festivals took place during my stay at Nafa. It was on March 8, which happened to coincide with the twentieth day of the first moon, the day which, according to the old lunar calendar, closes the New Year festivities. I venture to extract the following from my journal for that day:—

"Being told in the morning that a curious procession and dance were to take place, I got up early and hurried off to see it. The crowds were

* S. Ijichi, in the *Ryūkyū Enkaku Chiri.*

dense—numbers of people on the roofs of the houses, and a few even on the roofs of the funeral vaults! These crowds were composed almost exclusively of the lower classes, dirty and perspiring. I twice saw the procession pass—once as a common individual, standing in the sun and jolted by the crowd; once as an aristocrat, for whom space was cleared through the intervention of that ever-delightful individual, the Japanese policeman. The police treated the people pretty roughly, pulling and throwing them about like bundles; but the tortuous narrowness of these coral-wall-lined streets made drastic measures necessary. All the actors in the procession were women, some quite elderly—the owners or duennas of 'establishments'—some little girls, but most young women, all smiling and happy; not delicately fragile like the Japanese, but buxom and healthy-looking, and evidently enjoying to the full the amusement which their bright dresses and their dancing, or rather posturing, caused to the spectators. First came a figure armed with a long stick to clear, or pretend to clear, the way; for in this the Japanese police were the real agents. Then a flag with a picture of a carp swimming up-stream, the well-known symbol of successful endeavour; and immediately after this strutted a gorgeous lion with flowing mane and hair of red, black, green, and lilac, and a bright green face, attended by several dancing-girls in red and a woman with a gong, while behind came two women dressed up like men, and playing on horns which produced a sound rather like that of Scotch bagpipes.

"This closed the first part of the procession. The second part consisted of women pretending to ride toy horses. The third included a number of imitation Chinamen in figured silks, some—perhaps all—representing historical or legendary characters; but the only two I could identify were King Bun* (文王) on foot, leading the sage Tai-kō-bō (太公望) *in a jinrikisha!* This was the sole vehicle in the whole procession. But the most comical spectacle of all was a frail nymph of some fifty-five or sixty winters, who had got herself up like a high Japanese official of the olden time, and danced like mad. To her succeeded a long train of girls and children, each with a scarlet or purple fillet bound round the temples and hanging down behind, and this closed the procession."

It did not, however, close the semi-public doings of the season. The first moon—not the seventh moon, as in Japan—is the time of year when the graves of ancestors are visited, and when takes place what Europeans resident in the East term the Feast of Lanterns, which corresponds to our All Saints' and All Souls' Days. Paper lanterns for use in these memorial services were among the most prominent articles for sale in the Nafa market when I reached the island late in February.

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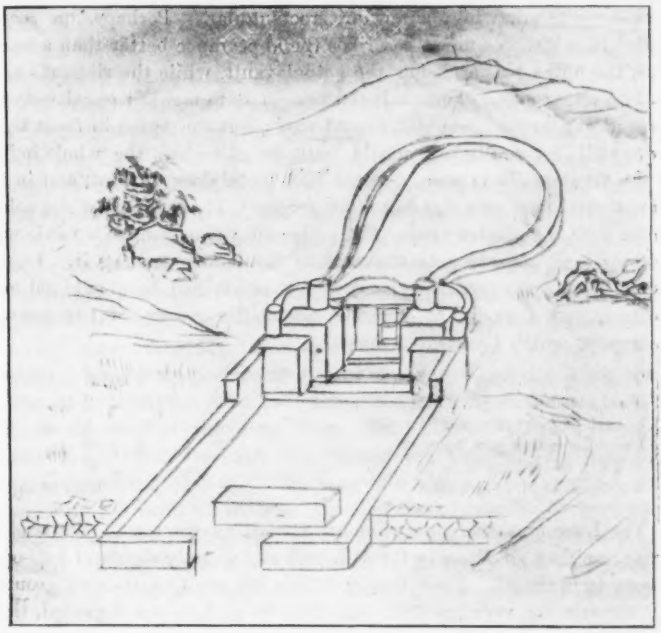
* Here and throughout this paper I have employed the Japanese pronunciation of the Chinese characters. The Pekingese pronunciation of this name is *Wên*.

Probably hygienic reasons have dictated so violent a departure from the orthodox Buddhist calendar. At any rate, it is now officially prohibited to open funeral vaults and wash the bones of the dead during the hotter half of the year.

These remarks bring us to a description of the Luchuan method of disposing of the dead, who occupy a much greater portion of the thoughts of the living than is the case in light-hearted Europe. So large and ubiquitous are the Luchuan graves, so imposing and dazzling is their plastered whiteness, that they attract the traveller's eye even



LUCHUAN GRAVE.

before he lands, remain with him constantly during his sojourn, and are the last thing to fade from his view when the ship carries him away. Luchu, proud in old days of its strict observance of Chinese etiquette, loves to style itself "the Land of Propriety." But the "Land of Picturesque Graves" would be a more appropriate cognomen. Not only physically, but morally also, these graves—funeral vaults one should perhaps rather call them, for each holds the remains of many generations—form the central feature of Luchuan life. They may come into play even commercially; for if a Luchuan in pecuniary straits wishes to raise money, the best thing he can pawn is his family vault. He can

raise a good round sum on that, for every one knows that he *must* pay it back. Vault-burial was introduced into Great Luchu from China at least five centuries ago. On the other islands may occasionally be seen specimens of the earlier-fashioned native graves, consisting of a circle of stones around the body, and two long stone slabs as a cover. Old ones are to be met with in secluded districts of Oshima, new ones sometimes in the Further Isles, with the bones of the deceased sticking out. The people of Oshima now bury their dead, Japanese fashion, in small graves with tombstones not very different in appearance from our own. In Great Luchu the vault is of universal and exclusive use. Most are horseshoe-shaped, while a few are rectangular. Perhaps, on second thoughts, a bishop's mitre describes the appearance better than a horseshoe, the mitre proper being the actual vault, while the ribbands are a wall on either side. The vault is sunk, so as to make it equal with the surrounding ground, generally coral rock; but the space in front being lower still (for vaults are mostly built on hillsides), the whole height of the front walls is seen. There is a metal door in front, and in the court there sometimes stands a stone screen. The brilliant white colour comes from the plaster used. Formerly the dimensions of a vault were fixed by law, according to the rank of the family owning it. I could not discover, however, that any such regulation had been adhered to in practice, and I prefer to give the actual dimensions of two average specimens, which I measured myself—

Total height of front	9 feet 8 inches.
Total breadth	22 „ 2 „
Length of court enclosed by walls	24 „ 8 „
Height of opening in front	3 „ 8 „
Breadth of opening in front	2 „ 8 „
Thickness of all stones used	— 16 to 18 in.

The Luchuans have no cemeteries, such as we see in England or Japan; neither are there in Great Luchu any ghastly sights of half-open graves, as in China. Each family builds its vault on its own ground; and, though the very greatest reverence is paid to the departed, there seems to be no superstitious dread of their near presence. As you ride through the country, you will see the peasant digging his field right up to the wall of the vault where lie his ancestors, and where he knows that he himself will lie some day.

When a Luchuan dies, a mosquito-net is hung over the body, and curtains are drawn all around, so that none may see in. The weeping relatives relieve guard, one by one, in the chamber of death. The funeral is attended not only by the family, but by other mourners, who, said to have been originally the servants of allied families, have in modern times developed into a professional class that earns a livelihood by simulating transports of grief. I had heard much about these funerals both from Japanese and natives; and one spring afternoon,

while on my way to visit that little gem of beauty, the royal pleasure-grounds at Shikina, I suddenly came on such a procession hurrying along a country lane—the Buddhist priest in front, then the coffin, then a train of some thirty persons, of whom five or six were hired mourners, apparently females, though immense straw hats hid their faces from view. They were attired in coarse cloth made of banana fibre; they uttered the most dismal groans, and tottered so that they had to be supported on either side by assistants, who, as it were, bore them up and at the same time pulled them rapidly along. The portion of the professional mourner's art most difficult of acquirement and most highly prized, is weeping copiously *through the nose*. In the production of these unpleasant tears—for so by courtesy let us call them—the professional mourners are said to attain extraordinary proficiency.

The coffin, having been brought to the vault, is left shut up for two years. In the third year the relations assemble again, and the nearest of kin wash the bones with the strong spirit called *awamori*, and then deposit them in earthenware urns called by the natives *jishi-kāmi*, the price of which varies from 16 cents for the poorest coolies up to $1 20c. (say 2*s.* 3*d.* of English money) * for the gentry. A specimen of each has been sent to the Pitt Rivers Museum, and described in the *Journal of the Anthropological Institute*. Speaking briefly, the urns are temple-shaped, and decorated with such Buddhist emblems as lotus-flowers and horned demons' heads (intended to scare away real demons). The colours—creamy white, blue-green, and yellowish brown—are harmonious and reposeful to the eye. As a rule, the bones of a husband and wife are placed together in the same urn. For children, as also for adult bachelors and spinsters—but Oriental communities harbour few such—there are urns half-size. All the urns of a family are ranged round the interior of the vault on shelves, tier above tier, in order of precedence. The graves of the Luchuan kings are at the Buddhist temple of Sogenji in Shuri. Their funeral urns are said to be magnificent, each costing ten times as much as that of an ordinary gentleman. Unfortunately, I had reserved a visit to this place until the end of my stay, and then illness prevented me from carrying out the intention.

So far as the temple itself is concerned, the loss was probably slight—Luchu, like Korea, having passed out of the stage during which Buddhism was powerful and its religious edifices splendid. Speaking generally, too, the whole Far-East is very little devotional, very little given to speculating on divine mysteries; and Luchu forms no exception to the rule. Not only the upper classes, as is the case in Japan, but even the lower classes, are indifferentists in religious matters, and almost the sole remaining function of the Buddhist priesthood seems to be to officiate at funerals. Nafa has a small and grimy Confucian

* The Japanese silver dollar being only worth about half an American gold dollar.

temple connected with the college in which a small number of young men were formerly trained as Chinese interpreters, and where instruction is still given in the Chinese classics. There are no others in the archipelago. The Buddhist temples are few in number, small, and mostly deserted. Of Shinto temples properly so-called, I saw none excepting a shrine on the Nammin Point at Nafa, erected by the Japanese, and a similar one at Naze in Oshima. Certain secluded and mostly abandoned holy places standing in groves correspond, however, to the Shinto temples of Japan—that is to say, that they are neither Buddhist nor Confucian, but dedicated to native ancestral spirits, and marked off by a straw rope symbolical of worship. There is generally a stone in such sacred spots, under which some ancient worthy's bones are said to rest. We have here, in fact, a very primitive sort of hero or ancestor worship, which has remained undeveloped on account of the unspirituality of the race and the intrusion of Confucianism.

Nor, because a nation is practically without religion, need it be without numerous minor superstitions to which a semi-credence is attached. To this the crematoria for scraps of paper at many street corners bear witness. The idea, borrowed from China, is that a certain sanctity attaches to the written word, and that scraps of paper bearing any writing must not be lightly thrown away, but should be decently cremated. The Luchuan crematoria for paper are, however, quite small things, about 4 feet high, not large elaborate structures such as Mr. Archibald Little describes in his 'Gorges of the Yang Tse.' I also came in contact with a superstitious idea relating to the washing of dead men's bones according to the custom described above. Happening one day to ride past a vault where this ceremony was going on, I dismounted and made towards the spot. The people began to scatter, and my two grooms implored me not to proceed, because, said they, if I did, the dead man's spirit, once scared away by a stranger, would never come to rest again. Of course I gave up the idea of witnessing the ceremony; for what was the satisfaction of mere curiosity compared with the distress of a family already in mourning? On some of the Further Isles (Yaeyama), the natives have a practice of going out into the woods to pray against the ravages of wild boars and of rats. Also they neither fish nor collect edible seaweed for a whole month before harvest-time, for fear of causing a typhoon. A superstitious feeling everywhere displayed is the fear of bad results likely to follow from being photographed. No doubt the Luchuan mind, properly explored during years of continuous residence and familiar intercourse, would furnish a quantity of similar items to the student of superstitions and of folk-lore. I found, too, that even the educated still entertained notions, borrowed from China, of dragons and other unreal monsters, which, however, belong rather to imperfectly developed science than to superstition properly so called.

Quainter still than the funeral customs of the Luchuans, is their

usage with regard to weddings. After the "middleman"—the marriage broker, as he might be termed—has negotiated the preliminaries, and proper presents have been sent by the bridegroom to the bride's family, the proceedings are as follows:—The bride is escorted to the man's house at one or two o'clock in the morning, under guard of her relations, the object of these precautions of time and escort being that the affair may not be bruited abroad, and excite impertinent curiosity in the neighbourhood. She and the bridegroom exchange cups of *saké* (rice beer), after which she is at once led home again. This brief ceremony is repeated three nights running, after which she remains three days with her parents, while the bridegroom is carried off by his friends to hold high revel. The object of this step, so far as the man is concerned, is that he may, on the very threshold of matrimony, prove his independence of wifely leading-strings, while to the woman it gives an opportunity to display freedom from jealousy, which is considered the worst of all feminine vices. After three days spent in this manner, the bridegroom goes home, being joined by the bride, who keeps house with him for another period of three days, at the expiration of which the bride goes to her parents' home, whither the bridegroom follows her. Her relations await his arrival with a pestle, painted and ornamented to represent a horse, on which he rides in, while all the boys of the neighbourhood greet his advent with drums and tomtoms, and anything that will make a noise. A grand family feast then takes place, after which the happy couple return home, and the long wedding ceremonies are at last concluded. The married life begun in so original a fashion is said to be mostly harmonious, as the wives yield to their husbands in all things. Should the husband die, the widow almost always remains true to his memory, which is an item of feminine devotion much prized in Far-Eastern lands, where, though a widower marries and makes himself comfortable again as a matter of course, widows are encouraged by public opinion to remain desolate.

Sweet potatoes form the staple food of the Luchuan people. The rich eat rice, and pork, and beef, and fish, and other things many, the general character of their *cuisine* being moulded on that of China. The poor, especially in years of scantiness, eke out their sweet-potato diet with a kind of sago obtained by soaking and pounding the heart of the *Cycas revoluta*, a small tree which resembles the sago palm,* and which, as already mentioned, is allowed to grow everywhere where no better use can be made of the soil. Numberless stories are current concerning the unwholesomeness of this sago—that it gives bad breath, that it distends the stomach without feeding the system, that people

* The Luchuan name is *sōtitsi*, the Japanese *sotetsu*, both being corruptions of the Chinese 蘇 鐵 which means "reviving iron," in reference to a popular idea that this tree is benefited by sprinkling iron near its roots.

sometimes fall down dead after eating it, etc. These tales doubtless require careful sifting and considerable discounting. The foundation of truth in them may be sought in faulty preparation of the sago by many of the peasants—each household manufacturing its own supply—and in bad cooking, the usual Luchuan plan being to make it into dumplings, sometimes pure, sometimes mixed with pounded sweet potatoes—a dish which may well lie heavy on any but the stoutest stomach. Prepared in the European fashion, Luchuan sago is quite palatable and perfectly innocuous. The Luchuans eat their food with chopsticks after the Chinese method; but as they call them by the Japanese name of *hashi*, it is at least possible that these useful implements reached them viâ Japan. There is an alcoholic drink called *awamori*, which resembles Chinese *sam-shu*, and is made of rice and millet. Tea is in general use, as elsewhere in the Far-East, but will not grow on the islands despite attempts to acclimatize it. The poor make their very inferior tea go further by boiling mugwort with it, which is supposed to strengthen the digestion.

The Luchuans sit cross-legged *à la turque*, not with their knees under them like the Japanese, nor are any but the best houses matted in Japanese fashion. Rather are their architectural and household arrangements Chinese in style, the walls being of stone, the rooms small, low, and rarely rising to more than one storey, and the floor being dirty. Each house is surrounded by a stone wall—generally coral—which ensures privacy, but sadly obstructs ventilation; and through a maze of these little low dwellings the narrow street, or rather lane, winds its tortuous way, sometimes muddy, sometimes paved with irregular stones more or less flat. There is less filth in the streets than in China, Luchu in this respect, as in so many others, standing half-way between China and Japan. In the middle of the town is a market-place. There are no vehicles of any kind, nor any public lighting. From time to time packhorses come along, and then pedestrians must be on the look-out; for the absence of a sidewalk and the extreme narrowness of the streets may cause collisions. Such is the general aspect of a Luchuan town—improved, however, at Nafa by the greater comfort and cleanliness which the residence of numerous Japanese officials and merchants has introduced; and made picturesque at Shuri, the capital, by the splendid position of the city on a rocky height, crowned by the ancient castle of the Luchuan kings, now the head-quarters of a Japanese garrison of 137 men. The royal apartments have, it is true, fallen a sacrifice to practical military needs; but the massive stone walls remain intact. In olden days, far back in the Middle Ages, when Great Luchu was torn into three petty kingdoms, and the art of war was still remembered, many castles (*gusiku*, as the Luchuans call them) studded the land, being mostly reared on natural eminences of coral rock by the petty lords and chieftains of each

district. Ruins of several such castles still remain, lending great picturesqueness to the landscape. The peasants' huts in the country are mostly put together of reeds, with a straw thatch, and are very poor-looking, though their meanness strikes one as less unendurable under so mild a sky and amid scenery so tranquilly charming than would be the case were they transported to a greyer clime. I nowhere saw any actual beggars.

A few pigs form an indispensable adjunct to every rural abode. Under the old native government, indeed, the rearing of pigs and goats was enforced by law on every household. The pigs are kept in a disgustingly dirty fashion, and are fed partly on excrements, so that it seems a mockery to add—what is nevertheless true so far as many places are concerned—that their styes are made of coral. Large open grassy spaces, often appearing as glades in the forest, form a characteristic adjunct to Luchuan villages which perplexed the early foreign visitors. Called "race-courses," these spaces also serve a variety of other purposes. Here rice is laid out to dry, and the village council meets—or met in old days—goods were bartered, justice was administered, rewards and punishments meted out, festivals celebrated. Nothing exactly similar to this institution exists either in China or Japan.

In piquant contrast to some of the native ways, are those evidences of Western civilization which modern Japanese officialdom everywhere carries with it—the pillar post-box, for example, and the telephone from Nafa to Shuri. Also at the entrance of each village there is now written up the number of inhabitants and the number of children of school age—a device not used in Japan itself, but resorted to here with the object of shaming parents into sending their children to school. To get the girls sent there has been found very difficult—in the Further Isles almost impossible. The following table may interest some readers:—

NUMBER OF PUBLIC SCHOOLS AND CHILDREN OF SCHOOL AGE.
(*December* 31, 1891.)

Divisions.	Number of schools.	Number of children of school age.	Number of children who attended.	Number of children who did not attend.
Nafa	10	6,775	1,256	5,519
Shuri...	2	3,909	710	3,199
Shimajiri	26	16,747	3,722	13,025
Nakagami	15	21,505	1,600	19,905
Kunchan	32	15,646	1,938	13,708
Kume-jima	4	1,314	464	850
Miyako-jima ...	9	6,298	1,087	5,211
Yaeyama-jima ...	3	3,095	584	2,511
Total	101	75,289	11,361	63,928

NOTE.—The above statistics do not include the Middle School or the Normal School. The young men in the latter are all obliged to dress Japanese (*i.e.* European) fashion.

The Japanese language is taught as a subject during the first year of schooling. After that, it is used as the vehicle for instruction in other subjects. I heard, however, many complaints as to the imperfect acquisition of the ruling tongue, and found by personal experience that few as yet understand it away from Nafa, and that even in Nafa itself, and among men holding official posts, the knowledge of Japanese is still wofully imperfect and superficial. Here, as in other countries, a few hours' schooling cannot at once outweigh home influence, which is perpetually pulling in the opposite direction. The Luchuan accent in Japanese, though very marked, is not unpleasing. It reminded me of the Korean accent.

No one walks in Luchu, excepting those who cannot afford some less fatiguing method of locomotion. Well-to-do folks always take a *kagu* —a closed chair borne on a pole by two coolies, and resembling the Chinese palanquin rather than the *kago* of Japan—or else they go on horseback. I generally preferred the latter alternative, as the *kagu* shakes one and hides the view. The diminutive Luchuan ponies have already been mentioned. They are invaluable little beasts, their endurance and docility making up for their Lilliputian size. They are not shod in any way, the metal horseshoes of Europe and the straw horseshoes of Japan being here equally unknown; yet they find their way no less nimbly than surely up and down the wretched tracks which in Luchu do duty for roads, and in which, at every moment, coral crags stick up through the soil like pins and needles. No wonder nobody walks who is not forced to it! In some districts of Japan, especially in the island of Yezo, where the horses are driven in trains of twenty or thirty, all are either leaders or followers, one leader to many followers; and should you get (as, of course, you generally do get) a follower, nothing will induce the obstinate animal to move unless he sees another horse immediately in front of him. This disagreeable state of things does not exist in Luchu, where the ponies are accustomed to going singly. Travellers would, however, do well to take their own saddles, as the native wooden saddle is extremely uncomfortable.

I have said that communication is bad in Luchu. There is indeed one broad and excellent road joining the port of Nafa to Shuri, the capital, distant—so the official mile-post states, for modern Japanese officialdom is nothing if not precise—1 *ri* 11 *chō* 26 *ken* 2 feet and 1 inch (!), say 3¼ miles English. A road a few miles long is also now being made from Shuri to a village on the east coast called Yonabara. With these exceptions, there exist in Great Luchu only the paths above described, and in the hilly northern portion of the island even these are absent. European accommodation of course exists nowhere, and there are Japanese inns only at the ports of Nafa and Naze. There is not even any accommodation for strangers at the capital, none of

those delicious hot baths, and smiling tea-house girls, and neat traysful of queer, pretty-looking food in Lilliputian morsels, that figure so largely in narratives of Japanese travel. The wayfarer in the interior of Luchu must carry everything with him on horse or coolie-back, and many are the groans of the Japanese officials when obliged to go their country rounds. When possible, they sleep at the village office or school-house; but in the north it is necessary to carry a tent. On the "Further Islands," one sleeps on board the steamer or else at the steamer office. The only point where Luchuan and Japanese travel resemble each other is the civility—the more than civility, the kindness—of the country folk.

One would have thought that, in a roadless country with so much coast-line, travelling by boat would have become common. It does not seem to be so in Great Luchu, though fishermen from Itoman (a village of some six hundred inhabitants) ply their trade on the coast of Kakeroma-shima and stay away for periods of several months, returning home only in January and July with the money so earned. Three men is the usual allowance to each boat. These are a sort of dug-outs, and three or four such dug-outs are often lashed together for company's sake. They are propelled by paddles; and, though easily upset, are also easily righted. The junks, known as *yambara-sen*, are two-masted, and resemble Chinese junks in build. None of them exceed 90 feet in length. Much of the timber for boat-building comes from Japan, the rest from Yambara (Kunchan), the most wooded district of the main island, where too is produced all the firewood and charcoal used in the south of the island. Not infrequently the boats are imported from Japan ready made. The steamer I travelled to Nafa in had three on board.

Steam communication between Japan, Oshima, and Great Luchu is now maintained throughout the year by the Japan Steamship Company (*Nippon Yūsen Kwaisha*), which runs boats once in every eighteen days from Kōbe to Kagoshima, Naze, Nafa, and back again the same way. The accommodation is European; the food of course Japanese, but good of its kind. Two smaller Japanese companies and one Luchuan company compete in the carrying trade, of which sugar is by far the most important item, so that extra boats are run during the busy sugar season—February to June. Bad weather is usually experienced on the passage; and the port of Nafa is so bad that the steamers can only get in and out at high water, and have to be moored to the shore at all times. It is a pity that Unten (Port Melville), which offers better anchorage, should be rendered practically useless by its distance from the chief Luchuan towns. Communication with the Further Isles is by a small steamer only, running twice monthly from Nafa, *viâ* Karimata-Minato in Miyako-jima, to Ishigaki-jima in two days,—at least, that is the schedule time. Beyond Ishigaki-jima there is no regular communication or postal delivery.

I stated at the beginning of this paper that the Governor and the ex-Chief Inspector of Police in Luchu were among those who laboured most kindly for my enlightenment. Questions of practical administration naturally cropped up from time to time in conversation, and it was interesting to find confirmed by their long experience and by the unanimous testimony of every Japanese official I talked with, and every Japanese book on Luchu that I read, Captain Basil Hall's assertion as to the tractableness of the natives and their freedom from crimes of violence—more especially as Commodore Perry had put this praise, together with much else, down to the score of "romancing" on the part of the early English explorers. Petty larceny, every one agreed, was the only decided Luchuan failing, and, for the rest, the land had been ruled in old days "by the mere waving of a fan." Even now there is but one gaol in the whole archipelago. One day the good-natured old Governor said to me, "We will take to-day at random, and see how many people there are in gaol, and what they are in gaol for." The result of the inquiry was as follows:—

PRISONERS IN NAFA GAOL, MARCH 12, 1892.

Offences.	Male.	Female.	Total.
Breaking prison and concealment of criminals	3	—	3
Avoidance of punishment	—	1	1
Forgery of private seals and documents	2	—	2
Murderous intent	—	2	2
Assault	6	—	6
Manslaughter	1	—	1
Murder	—	1	1
Libel	1	—	1
Theft	117	11	128
Fraud and receiving of stolen goods...	20	1	21
Offences connected with stolen goods	4	3	7
Violation of various rules and regulations	5	—	5
Incendiarism (intentional and accidental)	3	4	7
Total	162	23	185

The cause of the solitary murderess's crime was jealousy. Two women had quarrelled about a man—the reverse, perhaps, of what generally happens in Europe.

The cause—and this is more important—of Luchuan law-abidingness may be sought partly in mild government for many centuries; partly in the custom of wearing no weapons, such as those swords which the Japanese, till quite recent years, could not resist the temptation of drawing at the slightest provocation; partly and chiefly in a naturally good-tempered, quiet, even timid disposition. This speaks scarcely less clearly than does the nature of the Luchuan language to the probable absence of any admixture of Malay blood in the race. *Apropos* of the gaols, it may be mentioned that the Japanese authorities cause the

queues of criminals to be cut off and their faces shaved, Japanese fashion, in hopes of bringing about the abandonment of the national Luchuan coiffure for men. The effect, however, has been just the reverse, as no one likes to be mistaken for a gaol-bird. In this instance there was certainly an excess of zeal.

The principal industry of Luchu is sugar-planting. In fact, the islands may be said to live by their sugar, as do the three steamer companies who export it to Japan. Great Luchu far exceeds all the other islands in its produce of sugar. In 1891, 240,000 casks, each containing 130 "catties," * were exported; in 1892, 200,000. In 1893, only $\frac{7}{10}$ of the previous year's crop was expected. But as prices fluctuate greatly —from $2\frac{8}{10}$ cents or 3 cents per catty in 1892, to $5\frac{2}{10}$ or $5\frac{3}{10}$ cents per catty at the beginning of 1893—a reduced crop need not always entail decreased profits. The process of manufacture is as primitive as can well be imagined. A long pole, often a mere roughly-trimmed tree-trunk, fastened to the top of an iron or wooden roller which turns two other rollers by means of cogs, is pulled round and round by a horse or bullock, urged to this work by one or two men with sticks, while two other men feed the mill with sugar-cane. The juice thus expressed is boiled on the spot, and then poured into tubs to solidify. The Luchuan sugar is of a very dark colour and coarse quality. Most of it goes to Osaka, in Japan. The manufacture of sugar in Luchu dates from the seventeenth century, having then been learnt from the Chinese.

Besides sugar and a very strong spirit called *awamori*—already mentioned, as resembling the Chinese *sam-shu*—Luchu also produces woven fabrics of several kinds, which are highly prized in Japan, mostly for summer wear. Each island has its speciality—the *tsumugi* from Kume-jima, a silk fabric having light spots or stripes on a very dark ground (an inferior kind is made in Oshima); the cotton *kasuri*—blue from Great Luchu, brown from Yaeyama; the hempen *hosojōfu*, in a blue and a white variety, from Miyako-jima; the *bashōfu* from Oshima, made of banana fibre. It is not likely that any of these would suit the European taste, nor do the primitive methods employed permit of any but small quantities of these various stuffs being produced. Average prices are—

1 *tan* (about 28 feet)	*Ryūkyū-tsumugi*	$3·25
1 „ „ „	blue *kasuri*	1·50
1 „ „ „	brown „	1·25
1 „ „ „	white *hosojōfu*	10·00
1 „ „ „	blue „	15·00
1 „ „ „	*bashōfu*	1·00

In Tokio one has to pay about double; and choice pieces, even in Luchu itself, range much higher, especially the *hosojōfu*, this fine hempen fabric being a special favourite. So exquisite was the care

* The Japanese catty is approximately equivalent to 1⅓ lb. avoirdupois.

bestowed in former days on the manufacture of *hosojōfu*, that a single piece of 28 feet long sometimes occupied three years in the weaving, as the best work could only be done in dry weather. Such pieces would be sent as tribute to the Government of Great Luchu. It should be added that much of the cotton used in the Luchuan manufacture of *kasuri* is imported from Japan.

The scarlet lacquer of Luchu is celebrated in the neighbouring countries, and may be recognized by the rich brilliance of its colour, also often by its raised decoration in other and duller hues, the subjects being mostly flowers, especially the chrysanthemum. Hogs' blood enters as one ingredient into the basis of the less good sort. Purple is a colour very frequently employed for the decoration. Formerly scenery and figures were also introduced, and large handsome pieces thus adorned could be obtained; but this is now rarely the case. Indeed, the whole art has deteriorated owing to that double curse of our times—exhibitions, and the demand for quantity and cheapness. The best shop in Nafa, when I visited it, was filled with abortions in the shape of hideous large red lacquer breakfast cups, saucers, and even spoons, all of European shapes, perpetrated for export to America in connection with the Chicago Exhibition. How humiliating (is it not?) to see that in art, as in manners and in morals, the West cannot touch the East without corrupting and depraving it! However, that is not our present subject. Take them all in all, the productions of Luchu, whether natural or manufactured, are not very important. Some of the articles most needful to civilized life she has to import—wood, for instance, much of which for boat-building purposes comes from Japan, as already incidentally mentioned.

(*To be continued.*)

THE BIOGRAPHY OF SIR BARTLE FRERE.—REVIEW.*

By Sir FREDERIC J. GOLDSMID, K.C.S.I., C.B.

A MANIFESTLY superior intelligence and singularly attractive manner would have made Sir Bartle Frere a welcome companion in the choicest of social circles, had he never been called upon to take part in affairs of state as a ruler or adviser of his fellow-men. When he became a recognized statesman, entrusted with the discharge of high official duties, his intellectual and social powers could not fail to strengthen and impart lustre to his position; while at no time of his career could it be alleged that leadership in any way affected the Christian charity and consideration inherent in his nature. Such a man is eminently a

* 'The Life and Correspondence of Sir Bartle Frere, Bart., G.C.B., F.R.S., etc.' By John Martineau (John Murray: 1895).

fit subject for biography; and though to some minds eleven years after death may appear too long a period to await the written record of a prominent actor on the stage of politics, with its ever-shifting scenery, for some also a certain lapse of time may lend truth to the retrospect. Questions which agitate the world's politicians are historical as well as ephemeral, and there is far more of the former than the latter character in those discussed in the two handsome volumes quite recently submitted to the reading public by Mr. John Martineau. That they should meet with notice in our *Journal* needs no apology, for Sir Bartle was one of the Society's most esteemed presidents, and every inch a geographer.

Whether the thoughtful face and tall, stately figure of the subject of this biography are better rendered in the official costume of vol. i. than in the ordinary dress of vol. ii., will, perhaps, be doubtful to many. Each is excellent in its way; and each in its artistic verity serves as a fitting title-page to a faithful and graphic narrative. Nor is the word-portrait, so carefully executed by the biographer, and practically "touched" in every succeeding page, more remarkable for its accuracy than its consistency. The true man is ever before us; hopeful in difficulty, prudent in prosperity; cheerful in trial, calm in success; collected in danger, vigilant in repose; always considerate, never pretentious or self-glorious; courageous in act as in design, but cautious of impulse; strong in fixed principles of justice and rightful expediency, yet ever ready to hear, and sift in detail, all argument opposed to his own, provided it be not in opposition to those principles. Without proposing to enter upon a minute or critical review of these most interesting volumes, we may glance at the salient passages of the career which they describe, by the use of geographical names. When resident in Sattara, Frere's delicate mode of conducting an annexation of territory, obnoxious in his own eyes as to the native communities concerned, exemplified a noble and exceptional diplomacy. His tenure of the Commissionership in Sind was a triumph of statesmanship—evinced in an enlightened general supervision, a never-failing tact, and a judicious attention to details. Promotion to the higher Councils of India in Calcutta, and the government of an Indian Presidency in Bombay, was but the natural sequel to the career of the previous twenty-five years. The subsequent summons to undertake the government of the Cape of Good Hope, addressed to him at a time of great difficulty—effectually diverting, as it did, the exercise of his administrative talents to a new field in South Africa—was, perhaps, disappointing to those Indian friends and admirers who would gladly have welcomed him as their viceroy; yet must it be regarded as a proof of confidence in his "all-round" ability. For thus it happened that, nine years after completing his period of Governorship at Bombay—during which interval, in addition to the performance of other

important duties, he occupied a seat in the Home Council of India, proceeded on a special mission to Zanzibar, and accompanied His Royal Highness the Prince of Wales on an Indian tour—he received a letter from the Home Secretary, Lord Carnarvon, which was nothing short of an appeal to his patriotism and an invitation to resume official harness such as he could not ignore. In this letter was the following passage: "My hope is to induce you to accept the difficult and responsible, but, as I believe, the most important task of undertaking the government of the Cape, which becomes vacant on December 31, nominally as Governor, but really as the statesman who seems to me most capable of carrying my scheme of confederation into effect, and whose long administrative experience and personal character give me the best chances of success."

The proffered task was accepted. How it was accomplished became, unfortunately, a matter for divided opinion among statesmen at home. Though already known to many in outline, this phase in the colonial record merits a closer study than in reference to mere historical facts. It might then be made evident that, in spite of the adverse fiat and discourteous procedure of those who chanced to be his official judges, Frere's work in South Africa was really the greatest work in his life. Fairly weighed and sifted, it would in all likelihood stand forth as no failure, but an interrupted success; a conception never carried out, or to be carried out on his own lines, but comprehending the foundation of a stable colony and peaceful united South Africa, with an ideal of Imperial Government in origin essentially his own.

In England there has, perhaps, been a tendency on the part of even the supporters of Sir Bartle Frere's policy to treat the Zulu war as though it were the best of a bad choice—the sanction to evil that good might come. Those who were his fellow-workers in India, however, know how little a motive of mere expediency could influence him on such an occasion, and how impossible it would have been for him to infringe the rights of a savage chief, although the end obtained were British supremacy and the confederation of the South African colonies. The conviction that the safety of Natal and the Transvaal depended on bringing Cetywayo at once to book, and obtaining from him satisfactory pledges of future good behaviour; that his relations with ourselves justified our use of dictation; that we were demanding from him no more than we should under like circumstances have felt bound to demand from an independent powerful neighbour, such as France or Russia; and that we were really strong enough to enforce compliance, if necessary, while powerless to prevent a massacre if the outcome were left to chance —to this alone may be attributed the despatch of the ultimatum, some of the requirements of which, be it observed, had already been insisted on by other authority. We have the strongest grounds for rejecting the notion that the attainment of confederation, however desirable, was the

one object of his measures. He believed that this would ensue at its proper time. The immediate aim was peace with security—a status which could only be realized when Cetywayo's licence was held under control.

Favourable as may be our estimate of the whole book under notice, it is impossible to deny that the chapters relating to the Cape have a specially romantic as well as historical interest. Frere's visit to the Boer camp in the Transvaal (vol. ii. pp. 292–297) is excellently described, and the description—as also the relation of all South African incidents—will command the reader's attention and sympathy. That the last-used word should apply to the hero of the narrative, when unmeasured congratulation should have been the natural result of his labours, is one of those instances of the irony and perversity of Fortune which philosophers may weep over but cannot remedy. If the wisest of men has laid down that "the race is not to the swift, nor the battle to the strong," we need not be surprised that the repeated confirmation of this truth is found in the lives of the best and noblest of public servants. Nor can we marvel that, while the *mens conscia recti* remains a source of true consolation under trials, it needs more than human fortitude to restrain all outward sign of disappointment at the failure of worthily conceived intentions. The Cape Governor did, undoubtedly, feel the withdrawal of confidence in his measures by the home authorities to be both unjust and unnecessary; and if a sense of wrong was afterwards apparent in word or act, what wonder? Laocoon, invaded by the serpents —"*perfusus sanie vittas atroque veneno*"—is no longer the priest in repose.

But there is no warrant, in the biography or elsewhere, for the supposition which seems to have got abroad that Frere's last days were passed in "humiliation." Such a word is surely out of place in the description of so high and single-minded an individuality. That in his projects for the common good, he left no margin for self-interest, is quite true; and as for party considerations, which might have suggested to him provision for an evil day, he set these wholly aside in the performance of his duty. In his case, however, there was no actual loss of character or "humiliation"—a term which would imply, if not a loss of social position, the possible admission of derogatory act.

Sir Bartle joined the Royal Geographical Society in 1867, and was nominated a member of its Council in the following year, as again in 1869, and a Vice-President in 1870, 1871, and 1872. He was elected President in 1873. In June, 1874, he delivered an instructive address, which would have been remarkable if only for its appreciative notice of Livingstone, who had died in May of the previous year. But it was replete with matters of current and general interest. When giving up the chair on the same occasion to Sir Henry Rawlinson, the latter expressed his regret and that of the Fellows that the Council had been unable to persuade him to remain in office. "The Report of the

Council," were the words of the new President, "showed that during that year the Society had increased in a marked manner both in numbers and reputation; and for that exceptional prosperity they were, no doubt, greatly indebted to the high personal character of Sir Bartle Frere, united with his very special qualifications for the office." In 1874 his name is borne on the list of Vice-Presidents; in 1875, of Members of Council; and in 1876, of Vice-Presidents again. Absence from Europe causes a gap after this date, but we find him again enrolled among the Councillors in 1880–81, and among Vice-Presidents in 1882–83. At the first meeting of the Society after his lamented death in May, 1884, Lord Aberdare, the President for that year, referring to him as "one of their most distinguished Presidents," stated with truth that "no public servant had left behind him a purer and nobler name than Sir Bartle Frere." Sir Richard Temple, in his obituary notice of the deceased, contributed to a number of our former *Proceedings*, made use of an appropriate Oriental metaphor in assigning to him "a high-caste mind." The biography which has just been published affords ample proof of the truth of both propositions; and to these we may now add, as an extract from its pages, the words of our present President, quoted by Mr. Martineau. Bearing testimony to the active interest taken in geographical work by this not the least approved of his able predecessors in the chair, and his anxiety to promote every enterprise which had for its object the advancement of geographical science, Mr. Clements Markham states—

"Sir Bartle had been an accomplished geographer long before he was officially connected with the Society. In his many-sided way, he had been accustomed to look at administrative questions in India from a geographical point of view, and he used to say that geography and statistics were the two bases of departmental work. His mind was well stored with the thoughts arising from this way of considering the innumerable points he had had to decide in his long official career. Hence he always had some original and often very valuable suggestion to make when geographical questions were discussed in his presence. He saw at once, with wonderful quickness and precision, in what way the broad principles established in his mind through long consideration of the general subject bore on any new point that came before him. His power of exhibition was admirable, so that his own thoughts, never vague nor confused, were quickly conveyed in the clearest way to those with whom he acted. As a friend in council he had few equals, both from his thorough grasp of subjects under discussion, and from the extent and accuracy of his previous knowledge. Proposals and schemes which had long been in abeyance were quickly disposed of, and those which contained the germs of usefulness were put into practicable and working shape under his guidance. The indescribable charm of his manner had much to do with the smoothness and facility with which the official

machinery worked under his presidency; but when it was necessary, he displayed unbending firmness.

"His great pleasure was to show kindness and consideration for young men whose work came before him, and to inspire them with confidence. He was quick in distinguishing real merit from charlatanry, however cleverly veiled; and the former always secured the greatest and most patient attention at his hands. There was nothing which struck those with whom he acted so much as the total absence of any personal motive, however slight, in all he did or said.

"As to his own individual share in any measure or undertaking, he was absolutely indifferent. In this he always seemed to be the purest type of a public servant. To him the general good was everything, his own share in producing it absolutely nothing. Thus it was that there was many a suggestion made by him, many even matured plans which bore valuable fruit owing to his initiative, with which his name will never be connected in the remotest way. As a geographer his knowledge was not only sound, but, in many branches of the subject, and these far from being all connected with India, it was minute and detailed. He often displayed such detailed knowledge quite unexpectedly and on most unexpected points, so that where we only anticipated in him a general adviser we often found an expert."

This is no mere eulogy or conventional tribute of respect to the memory of a more than average good man. It is an estimate of character which can be certified in the memories, or illustrated in the note-books of those who have enjoyed the privilege of Sir Bartle Frere's acquaintance and friendship. Illustrations indeed—such as here referred to—would abound, although unlikely to find a place in set biography, as bearing upon comparatively obscure episodes. Of the many which readily occur to the mind of the present writer, two might be cited to exemplify his unobtrusive, and therefore unrecorded usefulness. They refer to the active part he undertook, at one time, in securing an acknowledged western frontier to Baluchistan; at another, in promoting telegraphic communication between England and India. Both questions were of high significance, and in both the object involved was attained. But the importance of results gives no guarantee that the story of beginnings will not fade into oblivion.

THE TRIANGULATION OF AFRICA.

By General E. F. CHAPMAN, C.B.

THE following letter, on the desirability of international co-operation for the purpose of obtaining the materials for an accurate map of Africa, has been sent to Mr. Clements R. Markham, C.B., President of the Royal Geographical Society, by General E. F. Chapman, C.B., Director of the Intelligence Division, War Office:—

I am anxious to bring before you a subject, connected with geography, which has been engaging my attention for some time past.

It appears to me that, great as has been the development of political and commercial interests in Africa during the past decade, our knowledge of the topography of the interior of the country has not made an advance by any means as important, and that there are large portions of that continent of which no accurate maps exist, although they have been for years under a civilized administration and occupied by settlers of European descent.

I, therefore, venture to suggest to you that the occasion of the meeting of the International Geographical Congress in London this year offers an invaluable opportunity for considering how a reasonably accurate and complete map of Africa can be built up, and for urging upon the different governments and geographical societies the advantages of united action.

Would it not be possible to ask the Congress to point out to the civilized States of Africa, the great importance, from an economic as well as from a scientific point of view, of carrying out geodetic surveys, wherever it is practicable to do so?

In South Africa, geodetic triangulation of a high class has been carried out in the Cape Colony and Natal; but it has not been connected trigonometrically with the Bechuanaland triangulation, although it almost touches it.

To turn this triangulation to practical account, it is, of course, necessary to extend secondary and tertiary triangulation from it over all the settled lands, in order to provide fixed points to which to tie the detail, and to which the boundaries of the numerous farms can be referred. Unfortunately, this has been but partially done in the Cape Colony and Natal, and it is only in British Bechuanaland that we see a definite scheme being consistently carried through.

In Lower Egypt triangulation for revenue purposes is being executed by the officers of the Irrigation Department, but its advantages have unfortunately been minimized by the difficulty of finding sufficient money to meet the expense of providing permanent marks.

In Algeria, on the other hand, the French have been more alive to the necessity of having a regular survey, as is shown by their excellent maps of that country. This survey is now being rapidly extended over the adjacent Protectorate of Tunis.

Italy, too, has seen the advantage of pushing on triangulated surveys, and has turned out minutely detailed maps of the country adjoining Massawa.

Where Europeans settle in Africa regular surveys must, sooner or later, become indispensable, and by commencing them as soon as a country is occupied, a great eventual saving is effected, as is well shown in the report of the Surveyor-General, British Bechuanaland, for the year 1890–91, from which I take the following extract:—

"From a practical point of view, the value of this work can hardly be overrated; in many countries erroneous surveys are one of the most fruitful sources of litigation and waste of money in connection with disputed land-boundaries, necessitating very often the enormous expense of subsequent geodetic triangulations and re-surveys of land grants. The Imperial Government has conferred a great boon on this territory by authorizing a geodetic triangulation as the basis of all future survey operations; . . . we are indebted for the great practical advantages we are already reaping from this work, viz. the correct and uniform data supplied to our surveyors, which enables them to do their work in a satisfactory manner, and the great facility and accuracy with which, in this office, we are enabled to lay down on the map of the country the results of every survey which has been connected with the trigonometrical piles."

I think it will be admitted that the completion of the geodetic survey of the

South African peninsula is a work which is urgently needed, and that it is to be regretted that the Orange Free State and the South African Republic have hitherto neglected this very necessary part of the duty of a civilized State.

The British South Africa Company, which is now laying out its territories for occupation and development, has an excellent opportunity for taking the lead in this matter, by starting a geodetic survey of its occupied areas in Matabililand and Mashonaland, which should eventually be pushed across the Zambezi into the country north of that river.

In the Nyasa Protectorate, as much labour has been expended in sketching routes and taking astronomical observations as would probably have sufficed, under proper direction, to produce a trigonometrical survey of the greater portion. Such a survey must eventually be made, and I think there can be little doubt that the truest economy would be to start it at once.

Still, it must be admitted that there are large portions of the continent of which fairly accurate maps are eminently desirable, but which are likely for many years to remain untouched by regular surveys. The requisite topographical information regarding these areas might in time, where the country is of a suitable nature, be obtained with comparatively little expense by the system of plane-tabling, based upon rapid triangulation, that was carried out by our officers in Afghanistan, and has since been extended with so much success, under the direction of Colonel Holdich, C.B., R.E., over Baluchistan.

A certain amount of this class of work has already been executed by English officers in various regions, viz. in Somaliland, on the Anglo-German boundary in East Africa, at Wadi Halfa, at Suakin, and on the Anglo-Portuguese boundary in South-East Africa.

It is, of course, impossible to dictate to independent travellers the line that they are to take, or the class of survey that they are to adopt; but it seems to me that the Royal Geographical Society might do much to influence intending travellers, especially those whose professed aim it is to aid the cause of geography, if it could induce other societies to join with it in impressing upon the travelling world that the requirements of the present day are fairly complete surveys of areas, rather than mere routes. Route traverses, whether supported or not by a few astronomical observations, are in many parts out of date. There are some areas scored all over by the tracks of explorers, of which we are still unable to put on paper anything like a sufficiently good general map on a fairly large scale. Should the geographical societies think fit to give it to be understood that the right way to aid geographical science is to make a fairly complete survey of a district rather than to add one more long thin line across from sea to sea, I am confident that we should advance much more rapidly than at present towards a complete knowledge of the Dark Continent.

In order, however, to utilize to the full any such surveys as may be made, it is necessary that we should be able to locate them with accuracy. To do this we must have in their immediate vicinity points so accurately fixed that their values are above criticism. Where we still have to depend upon route traverses, such points are even more necessary. Triangulation, even of the most rapid class, moves comparatively slowly, and it appears certain that for years to come geographers will have to depend largely on other methods. I wish, therefore, to raise the question as to whether anything can be done in a comprehensive manner to provide the framework of accurately fixed points that is so much needed.

It seems to me that much might be done by a system of co-operation and exchange between the different governments and the various geographical societies of Europe, and I would venture to suggest that by their united action it might be

possible to arrive at a list of all the well-fixed places in non-surveyed portions of Africa, and to inaugurate concerted measures for establishing the positions of the other places of sufficient importance.

Geography, at present, suffers not from a want of observers, but rather from an excess of observations of a kind that cannot be trusted, which only increase the compiler's difficulties instead of removing them. No doubt almost every observation that is taken throws some light, confirmatory or otherwise, on those taken by previous travellers. Where, however, as often happens, there is a discrepancy between the new and the old results, it is of the utmost importance that we should obtain full information as to the trustworthiness of the new observations. In this matter the Germans have set an excellent example to other nations; and if their practice were more generally followed, there would be far more certainty of all observations being taken at their proper value. At the same time, it is eminently desirable to get observations of a better class than was formerly possible. If the various governments or societies could arrange to send competent observers to the countries in which they are interested, how many important places might be fixed in longitude by means of the telegraph lines that are now spreading over the continent in all directions! The points thus determined would go far towards providing the framework that is so much wanted.

In Asia, also, there is one matter which might well be brought to the notice of the Congress. I allude to the question of joining the great trigonometrical survey of India with the Russian triangulation. The Congress could, no doubt, express an authoritative opinion as to the value, from a scientific point of view, of the results to be obtained from the completion of this work, an opinion which would do much to influence the governments concerned to consider whether they could provide the funds necessary to carry it out.

To sum up, my suggestions are that the Congress should be invited to consider and bring to the notice of the various governments concerned and to the geographical societies of the world, the following subjects:—

(1) The advantages to be gained from an economic, as well as from a scientific point of view, of extending geodetic surveys in the settled portions of Africa.

(2) The importance, in districts beyond the probable range of geodetic surveys for the next few years, of making surveys of areas rather than of routes; and the advisability of basing such surveys on rapid theodolite triangulations, wherever it is practicable to do so.

(3) The desirability of collecting a complete record, as regards Africa, of all the positions that have been accurately fixed astronomically in areas that have not been triangulated, and of combining measures for the purpose of determining new positions, taking care that, in the case of all future observations, full data should be published so as to enable the geographical world to appraise them at their proper value.

(4) The advantages to geodetical science of trigonometrically connecting the triangulation of India with that of Europe by joining it on to the Russian triangulation of Trans-Caucasia.

THE GEOGRAPHY OF MAMMALS.*

By W. L. SCLATER, M.A., F.Z.S.

No. III.—The Neotropical Region.

Sect. 1.—Boundaries of the Neotropical Region.

The Neotropical Region is, no doubt, after the Australian, the most distinct of all the regions. It includes not only the continent of South America, but the West Indies, Central America, and a considerable portion of southern Mexico. As regards its northern termination, on account of the great admixture of Nearctic and Neotropical forms which takes place where the two regions join, it is impossible to lay down anything but an approximate boundary. Mr. Wallace (11) draws the line from the mouth of the Rio Grande on the Atlantic side to the neighbourhood of Mazatlan, in about the same latitude, on the Pacific side, but bends it down between these two points so as to include in the Nearctic Region the whole of the high tableland down to the city of Mexico.

Some American naturalists, among others Merriam and Allen (1), include in the Neotropical Region the southern extremities of the peninsulas of Lower California and of Florida. This, however, appears to be unnecessary, at least so far as the mammals are concerned, though there are certainly a considerable number of Neotropical birds and insects found in both these districts.

Besides the mainland of Central and South America and the West Indies, the Falkland Islands and the Galapagos must likewise be included in the Neotropical Region.

The West Indies form an important subregion, containing some forms of great interest, and will be treated of in detail below.

The Falkland Islands are situated in the south Atlantic, about 250 miles east of the nearest point of Patagonia. They are, however, known to be connected with the mainland by a shallow sea of less than 100 feet in depth, and therefore present all the characteristic features of a "continental" group of islands. The only indigenous mammals are a wild dog (*Canis antarcticus*) and a vesper-mouse (*Hesperomys*), which seem to be distinct, though closely allied to the mainland forms. The birds also are mostly identical with those of the mainland, though there are some just recognizable representative forms.

The Galapagos, a group of five larger and ten smaller islands, are situated in the Pacific, exactly under the Equator, at a distance of from 500 to 600 miles west of Ecuador. They rise up from very deep water, and are entirely of volcanic origin. They are therefore typical "Oceanic" islands. With the exception of two vespermice, slightly differing from those of the mainland, and a peculiar bat (*Atalapha brachyotis*), there are no indigenous mammals (2) in the Galapagos. There are, however, a considerable number of birds in these islands, most of them not found elsewhere, and many of them restricted to individual islands in which they represent each other (7).

There can be no doubt that the Galapagos have never, at any period of their history, been joined to the mainland, or to one another, and that, owing to the fact that they are situated in the region of equatorial calms, immigration from the mainland is very occasional. In this way has been gradually evolved the peculiar fauna, which, although highly specialized, shows abundant evidence of having been derived from the nearest mainland.

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* Continued from vol. iv. p. 33. Map, p. 512.

Sect. 2.—General View of the Mammal Fauna of the Neotropical Region.

The Neotropical Region is essentially one of luxuriant tropical vegetation, the great mass of the land from Central America to Uruguay being occupied by vast forests. South of the tropic of Capricorn the woods soon disappear, and the country, over a large part of its surface, becomes a flat treeless expanse covered with more or less abundant pasture known as the pampas, while all along the western coast extends the giant range of the Andes, the eastern flanks of which are, as a rule, well watered and wooded, while the western slopes from the Gulf of Guyaquil to the island of Chiloe facing the Pacific are utterly dry and arid. There are, however, also in the higher parts of Venezuela, the Guianas, and Southern Brazil, open grassy plains called "campos," which rise as islands from a surrounding sea of evergreen tropical forest.

The mammalian fauna of the Neotropical Region is naturally a rich one, but in the number of genera and species falls considerably short of that of the Ethiopian Region. This may perhaps be accounted for by the physical features of the country, which are certainly not so favorable for mammalian development as the more open and varied country of Africa.

This deficiency in mammalian life is, however, more than counterbalanced by the abundance of other groups of animals, more especially of birds and insects, to the development of which the luxuriant tropical vegetation seems to be especially conducive.

Again, the mammalian fauna of the Neotropical Region is quite as remarkable for what it does not possess (lipotypes) as for what it has. Everything points to the conclusion that during a long geological age, probably throughout the greater part of the Tertiary epoch, South America was entirely isolated from the rest of the world. Thus the present fauna has arisen from two quite different sources—first, from the original fauna of early Tertiary times; and, secondly, from immigrants from the north, some of these being of rather long standing, and others of later arrival.

Of the nine orders of terrestrial mammals, representatives of eight occur in the Neotropical Region, the only order entirely absent being the monotremes, which are absolutely confined to Australia.

The marsupials are represented in the Neotropical Region by a single family only, out of seven into which this order is usually divided. This is the *Didelphyidæ*, or opossums, of the twenty-four generally recognized species of which one (*Didelphys marsupialis*) ranges north with some modification into the Nearctic Region.

The third order of mammals—the Edentata—is highly characteristic of the Neotropical Region. Of the five generally recognized families two belong entirely to the Old World; the other three—the sloths, the ant-eaters, and the armadillos (which are more nearly allied to one another than to the two Old World families)—are, with the exception of one species of armadillo (*Tatusia novemcincta*), which extends into Texas, absolutely confined to the Neotropical Region. Besides the three living families of edentates, there are two (the *Megatheriidæ* and *Glyptodontidæ*) now extinct, which are chiefly characteristic of the Neotropical Region, though remains of them have also been found in certain formations in North America (6).

The fourth order of mammals, the ungulates, is very poorly represented in the Neotropical Region, four only out of the fourteen usually recognized families being found within its limits. The peccaries (*Dicotylidæ*) consist of only two species, of which one (*D. tajacu*) ranges as far north as the Southern United States, and the other is confined to the Neotropical Region. A second family, the *Camelidæ*, is shared by the Neotropical Region with the Old World. The representatives

of this family in the New World are the lamas, belonging to the genus *Auchenia*. They are entirely confined to the higher ranges of the Andes and to the desolate plains of Patagonia.

The deer (*Cervidæ*) of the Neotropical Region all belong to two peculiar genera (*Cariacus* and *Pudua*), of which the former extends northwards throughout the United States to British Columbia, while the latter is found only in Chili.

Finally, the tapirs (*Tapiridæ*) are represented by four species, all of which are peculiar to this region, the only other existing tapir known being the Indian tapir of the Malay Peninsula. The explanation of this curious case of discontinuous distribution is afforded by the past history of the group. During Miocene and Pliocene times, members of this genus and its allied forms were found both in North America and also throughout the Old World from France to China. This gives us direct evidence of the former much wider extension of the family of tapirs, and bridges over the present great gap in its distribution.

As already stated, the fauna of the Neotropical Region is almost as remarkable for the absence of certain families as it is for the presence of peculiar forms. This is specially noticeable in the Ungulata. There is no existing representative of the four great families of the oxen, rhinoceroses, horses, and elephants in this region, though remains of the latter two groups have been found in most recent deposits of Argentina. Here they were probably immigrants from the north, which survived but a short time in this locality.

Turning now to the rodents, we find that out of the four chief divisions into which this order is separated—the squirrels (*Sciuromorpha*), the mice (*Myomorpha*), the porcupines (*Hystricomorpha*), and the hares (*Duplicidentata*)—the first two and the last contain very few peculiar genera and no peculiar families in this region. But, on the other hand, out of the six families of *Hystricomorpha* four are restricted to this region, while of the remaining two, one (the *Octodontidæ*) is found elsewhere only in Africa, and the other the porcupines (*Hystricidæ*) is of wide distribution. Moreover, all the neotropical genera of the Hystricomorphine division are, without exception, confined to this region.

The Carnivora, which follow next, are well represented in the Neotropical Region, but belong generally to families of wide distribution. But one family, the raccoons (*Procyonidæ*), with the exception of a single genus (*Ælurus*), which is perhaps doubtfully referred to it, is entirely confined to the New World. On the other hand, the *Viverridæ*, so widely spread in the Old World, are entirely absent in America.

With the exception of some four or five species of shrews, which have obviously spread southwards from the Nearctic Region, wherein they are found in considerable numbers, the Insectivora are represented in the Neotropical Region only by a single remarkable family. This is the solenodont—a characteristic form of the Greater Antilles—absolutely unknown elsewhere. The Insectivora are usually considered to be the most generalized of all the mammalian orders, and to be the least-changed descendants of the ancestral group from which most of the other orders of mammals have originated. If this be the case, it seems strange that we should find no traces of them on the continent of South America, which was, doubtless, long isolated from the rest of the world, and which still contains many representatives of primitive and declining types. The Palæontological history of the Insectivora is, however, as yet very incomplete, as very few fossil forms of this order have been described. It is, therefore, possible that when future discoveries have increased our knowledge on this subject, this seeming anomaly may be explained.

The Neotropical bats (*Chiroptera*) are of great interest; they are included in three families, of which two (*Vespertilionidæ* and *Emballonuridæ*), although

containing several peculiar genera, are found in other parts of the world, but the third (*Phyllostomatidæ*) is entirely confined to this region.*

This family, which numbers among its members the true vampires or blood-sucking bats (*Desmodus* and *Diphylla*), is a very considerable one, numbering at least sixty species, distributed among thirty-three genera, which are doubtless still to be supplemented by future discoveries.

Finally, the Neotropical Region possesses two families of monkeys, the marmosets (*Hapalidæ*) and the capuchins (*Cebidæ*), neither of which are found elsewhere. Moreover, both these groups are distinguished from their Old World allies by very important anatomical characters, which render them absolutely distinct from the Old World monkeys and apes.

Summarizing these statements, we find that the Neotropical Region is characterized by the exclusive possession of no less than ten families of mammals, namely—

Bradypodidæ (sloths);	Caviidæ (guinea-pigs);
Myrmecophagidæ (ant-eaters);	Solenodontidæ (solenodonts);
Chinchillidæ (chinchillas);	Phyllostomatidæ (vampire bats);
Dasyproctidæ (agoutis);	Hapalidæ (marmosets);
Dinomyidæ (dinomys);	Cebidæ (capuchin monkeys);

and by the presence of about 130 genera, of which 103 are restricted to its boundaries.

On the other hand, when we compare the fauna of the Neotropical with that of other regions, the deficiencies or "lipotypes" are manifestly considerable. For example, the following ten families of mammals, all fairly well spread over the rest of the world except Australia, are entirely absent from this region :—

Bovidæ (oxen).	Talpidæ (moles).
Equidæ (horses).	Pteropidæ (fruit-bats).
Elephantidæ (elephants).	Lemuridæ (Lemurs).
Lagomyidæ (pikas).	Cercopithecidæ (Old World monkeys).
Viverridæ (civets).	Simiidæ (anthropoid apes).

Sect. 3.—Subdivision of the Neotropical Region.

The divisions of the Neotropical Region adopted by Mr. P. L. Sclater, mainly from a consideration of the class of birds (8), are six in number, namely—

1. The *Antillean Subregion*, containing the Greater and Lesser Antilles, exclusive of Tobago and Trinidad.

2. The *Central-American Subregion*, containing all that part of the whole region that is north of Panama.

3. The *Columbian Subregion*, containing Trinidad and the slopes of the Andes, through Venezuela, Colombia, Ecuador, and Peru, into Bolivia.

4. The *Amazonian Subregion*, embracing the whole watershed of the Orinoco and Amazons up to the hills, and including the highlands of Guiana.

5. The *South Brazilian Subregion*, containing the wood region of South-East Brazil, Paraguay, and the adjoining districts.

6. The *Patagonian Subregion*, containing Patagonia, Southern Argentina, and Chili, and running up the west coast of the continent to Guyaquil.

This division, although no doubt perfectly good when the distribution of birds is mainly relied upon, presents considerable difficulties in the case of mammals, owing chiefly to our ignorance of the limits of the distribution of the greater number

* One species, *Macrotus californicus*, has been found as far north as California.

of the South American mammals, especially of the smaller forms. There is, however, no doubt that the Antilles or West Indies (excluding Trinidad and the other islands off the coast of Venezuela, which are connected with the mainland by quite shallow water) form a very well-marked subregion, in which the terrestrial mammals, though not very numerous, nearly all belong to peculiar genera.

The higher ranges of the Andes from Ecuador southwards, together with the pampas of Southern Argentina and Patagonia, form another well-marked subregion characterized by a number of peculiar genera and species. But the whole remainder of the Neotropical Region from Mexico to Southern Brazil contains, so far as we understand it at present, a more or less homogeneous mammal-fauna, of which, however, the northern half possesses a considerable admixture of Nearctic forms, while the southern preserves a more purely indigenous facies. It will, therefore, be quite in accordance with the facts of nature, as well as convenient, to separate the northern portion of this extensive area as the Central American (or Transpanamanic) subregion. But as regards the southern portion, until our knowledge of the distribution of South American mammals has made greater progress, it seems best to unite the Colombian, Amazonian, and Brazilian subregions of the Ornithologists into one combined subregion, which may be called the Guiano-Brazilian Subregion.

We shall thus have, as regards mammals, four subregions of the Neotropical Region, as follows:—

1. The *Antillean Subregion*, comprising the whole of the West India Islands except Curaçao, Trinidad, and Tobago.

2. The *Central American Subregion*, comprising the lowlying and southern parts of Mexico and Central America as far as the Isthmus of Panama.

3. The *Guiano-Brazilian Subregion*, comprising the greater part of South America from the Isthmus of Panama to the southern limits of the great forest in about lat. 30°. S., and from the forest of the eastern slopes of the Andes to the Atlantic, including Trinidad and the other islands off the coast of Venezuela.

4. The *Patagonian Subregion*, comprising the higher ranges and western slopes of the Andes from Guyaquil to Tierra del Fuego and the pampas of Argentina and Patagonia.

Sect. 4.—The Antillean Subregion.

The mammal-fauna of the Antillean Subregion is exceedingly poor, so poor, indeed, that it seems almost doubtful whether the islands of which it is composed have ever been directly connected with the mainland of America as at present constituted. To begin with the rodents, four genera of this order are represented within its limits, and three of these are restricted to the subregion. *Megalomys* (a large rat, over 12 inches in length without the tail) is allied to the vesper-mice of the American continent, and has been obtained only in the islands of Martinique and St. Lucia, where it is now becoming very rare (10). A more important factor in the Antillean mammal fauna is *Capromys*, a genus allied, according to Flower and Lydekker, to the coypu rat of South America, but also showing some affinities to the porcupines. There are five or six species of this genus usually recognized, of which two or three are restricted to Cuba, one is peculiar to Jamaica, and one to the Bahamas, while another species has been recently discovered in Swan Island, situated in the middle of the Gulf of Mexico. An allied genus (*Plagiodon*) with one species, differing from *Capromys* only in a slight modification of the teeth, is found in Hayti. It is obviously derived from the same stock. A peculiar species of agouti (*Dasyprocta cristata*) is found in two of the Lesser Antilles—St. Vincent

and St. Thomas; the other members of this genus belong to the mainland of Central and South America. The only other order of terrestrial mammals represented in this subregion is the Insectivora, and this is the more remarkable because, as already shown, one of the special characters of the Neotropical Region is the almost complete absence of this group within its limits. The West Indian representatives of this order are two in number, and belong to a peculiar genus (*Solenodon*), which is of rather doubtful affinities and is of family rank. It is allied in some respects to the moles (*Talpidæ*), and in others to a peculiar Madagascan family, the tanrecs (*Centetidæ*). The solenodonts are small creatures with a somewhat shrew-like aspect, a long snout, and a long naked tail. There are two representative species of this genus confined to the islands of Hayti and Cuba respectively.

The bats of the Antillean islands, as would naturally be expected, are somewhat more abundant than the terrestrial mammals. There have been recorded by naturalists about thirty species belonging to some twenty genera as found in the different islands, the greater number being from Cuba and Jamaica. On examining the list, it will be found that of these twenty genera three only seem to be confined to the West Indian Region, while thirteen are spread over the greater part of the Neotropical Region, one belongs to the Nearctic Region, and the others are of wider distribution.

The evidence of the bats, therefore, points unmistakably to the inference that the West India Islands have been peopled with mammalian life from South and not from North America. In this connection it may be noted that Mr. Frank Chapman in an instructive article (4) on the origin of the West Indian fauna, recently published, has stated, as regards the birds, that the total number as yet recorded as met with within the limits of this subregion amounts to 550. Of these 303 are endemic, while the remaining 247 may be allotted to the countries from which they have been apparently derived as follows:—

Common to North and South America	16
Of general distribution in the tropics	56
South American (ten in the Windward Islands, three only in the Greater Antilles)	13
Central American	3
North American (all annual migrants from the north, through Florida, and the larger proportion found in Cuba)	160

This summary gives us a clue to the origin of the more recent additions to the West Indies fauna, which is obviously by migration from the north. If, however, the relationships of the 303 endemic species are examined, it will be at once evident that they are all more closely allied to South American than to North American forms, and, like the bats, show that the islands have been stocked with life from the south. Moreover, Mr. Chapman, as well as Mr. Wallace, has pointed out that nearly all the more distinct and most characteristic West-Indian birds are found in the Greater Antilles (*i.e.* Cuba, Hayti, Porto Rico, and Jamaica), and that the Lesser Antilles form a distinct group, the line of separation between the two provinces coinciding nearly with the deep channel between the Virgin Islands on the west, and the Anguilla group on the east.

On the whole the Lesser Antilles appear to have derived their fauna direct from South America, but probably in times considerably remote, and without the assistance of a land-connection. The almost complete absence of terrestrial mammals and of representatives of sedentary and non-migratory birds in the Lesser Antilles seem to show this. For instance, Grenada possesses only fifteen land-birds also found in Trinidad, and of these none belong to the sedentary families, although

the two islands are only separated by an interval of 75 miles of sea. On the whole, therefore, it seems probable that, although the Lesser Antilles have derived the bulk of their fauna from South America, they have never been directly connected with that continent.

Of the Greater Antilles, Jamaica and Cuba have by far the richest endemic faunas, whereas in Hayti and Porto Rico the total number, as well as the number of endemic species, is considerably smaller. Jamaica, therefore, with its small area (one-tenth of that of Cuba, one-eighth of that of Hayti, and a little more than that of Porto Rico), and in spite of its more isolated position, contains on the whole, so far as our present knowledge goes, the richest fauna.

This may, perhaps, be explained by the fact that between the north-east corner of Honduras and Jamaica there stretches a series of more or less shallow banks, so that a comparatively slight elevation of the intervening sea-bottom would very nearly connect Jamaica with the mainland.

Whether such a complete land connection (or only an approximation of land areas) by this route ever existed, cannot at present be definitely settled. On the one hand, as pointed out by Mr. Chapman, the disproportionately rich fauna of Jamaica, the shallow sea, and the West Indian affinities of Swan Island (as shown by the presence of a species of *Capromys*) lead to such a direct connection. On the other hand, the scarcity of land-mammals in Jamaica and Cuba, and the absence of many families of birds found on the mainland, rather point the other way. The help in these questions to be derived from palæontology is up to this time very scanty. The only remains of fossil mammals that have been yet obtained from the West Indies are certain detached teeth and some fragmentary bones, found in some caves in the island of Anguilla, which is situated just to the east of the deep channel separating the Greater from the Lesser Antilles, and must, therefore, be included in the latter province. These remains have been described by Prof. Cope (5), who considers them to be related to the Chinchillas, a family of rodents confined to South America.

The nature of the mammalian genera of the Antillean Region is summarized in the subjoined table:—

	Rodents.	Insectivores.	Bats.	Total.
Endemic	3	1	4	8
Nearctic	0	0	1	1
Neotropical	1	0	12	13
American	0	0	1	1
Cosmopolitan	0	0	2	2
Total ...	4	1	20	25

Sect. 5.—The Central American Subregion.

This subregion, as has been already shown, contains the coast-lands of Mexico lying along the Pacific and Atlantic shores from Mazatlan on the north on one side, and from the Rio Grande on the other, together with the whole of Central America from the Isthmus of Tehuantepec to that of Panama.

As regards the fauna of this part of America, we are fortunate in being able to refer to the excellent account of it contained in the 'Biologia Centrali-Americana' of Messrs. Salvin and Godman. The volume relating to the mammals in this work was undertaken by Mr. Alston, and finally completed after his death by Mr. P. L.

Sclater in 1882 (3). Out of a total of sixty-nine genera of mammals represented in this subregion, only two seem to be absolutely restricted to it, and these, moreover, are genera of bats, which may possibly be found at some future time to extend into the main South American continent.

Of the sixty-seven non-peculiar Central-American genera of mammals, forty-one are Neotropical types—that is, found also in one or more of the other subregions of this region—five are Nearctic, nine are found both in the Nearctic and in other subregions of the Neotropical Region, and twelve are cosmopolitan, or, at any rate, found in some part of the Old World as well as in the New.

These facts show conclusively the thoroughly Neotropical character of the Central-American Subregions, which, although the admixture of northern forms has really made very little progress, may be defined as that part of the Neotropical Region which has been subjected to an incursion of Nearctic types.

The marsupials in the Central American Subregion are represented by two genera containing about seven species, most of which are also found further south. One of these—the common opossum (*Didelphys marsupialis*)—extends northwards into the Nearctic Region as well as far southwards into Brazil, where, however, it has a slightly modified form.

The edentates are well represented in the Central-American Subregion by two sloths, three ant-eaters, and an armadillo, although the greater number of these are met with only in the most southern portion of the subregion. The armadillo (*Tatusia novemcincta*) is a widely spread species, ranging from Texas throughout the subregion, and extending southwards to Paraguay.

Central America is also remarkable for possessing two out of the four American species of tapir exclusively confined to it; these are Baird's tapir (*Tapirus bairdi*), extending from Mexico to Panama, and Dow's tapir (*T. dowi*), found only in Guatemala and Costa Rica.

Very few of the typical South American Hystricomorphine rodents extend as far north as Central America. The greater number of the animals of this order found within Central American limits belong to the Sciurine and Murine groups, which have spread southwards from their homes in the Nearctic Region.

Passing on to the Carnivora, we find nearly all the genera of this order met with in the South American continent (amongst which are the cats, dogs, raccoons, and weasels) also represented in this subregion. The only exceptions are *Icticyon*, a peculiar form of wild dog restricted to South-East Brazil, and the Bear (*Ursus*), a species of which is found in the Andes of Peru.

The bats of Central America are fairly numerous, and nearly all belong to South American genera. A large proportion of them are referable to the *Phyllostomatidæ*, one of the characteristic mammal-families of the Neotropical Region.

Finally, as regards the monkeys, the marmosets (*Hapalidæ*) appear to be represented only by a single species, which is an intruder into the extreme southern end of the subregion. Of the other family of American monkeys (*Cebidæ*), about eight species, against a total of at least sixty found in the Guiano-Brazilian Subregion, occur in the Central-American Subregion. Of these five are peculiar, or not yet ascertained to occur elsewhere.

The following table gives the statistics of the origin and distribution of the Central-American genera of mammals. The "Endemic" genera are those confined to this subregion; the "Nearctic" genera are those common to this subregion and the Nearctic Region; the "Neotropical" genera are those common to this subregion and one or more of the other subregions of the Neotropical Region; "American" designates those found in both the Neotropical and Nearctic Regions, and "Cosmopolitan" those met with also in the Old World.

	Marsupials.	Edentates.	Ungulates.	Rodents.	Carnivores.	Insectivores.	Bats.	Monkeys.	Total.
Endemic ...	0	0	0	0	0	0	2	0	2
Nearctic ...	0	0	0	2	2	1	0	0	5
Neotropical	1	4	1	6	2	0	22	5	41
American ...	1	2	0	0	4	1	1	0	9
Cosmopolitan	0	0	1	4	4	0	3	0	12
Total ...	2	6	2	12	12	2	28	5	69

The inspection of this table will show at a glance that the Central-American Subregion is predominantly "Neotropical" as regards its mammals, but has received a small immigration of Nearctic forms, and possesses only few endemic types.

Sect. 6.—The Guiano-Brazilian Subregion.

This extensive area, in which is combined three of the subregions usually allotted to birds, is the largest and by far the richest of the four divisions of the Neotropical Region adopted in the present article. It extends from the Isthmus of Panama in the north to about 30° south latitude. But the southern frontier between this and the Patagonian Subregion is very undecided, the fauna of Uruguay and the northern part of the Argentine Republic containing forms characteristic of both subregions. The western boundary is formed by the well-watered and forest-clad western slopes of the Andes, the waterless eastern slopes, together with the inland basin of Peru and Bolivia from the neighbourhood of the equator downwards, being referable to the fourth or Patagonian Subregion.

The greater part of the Guiano-Brazilian Subregion consists of forest, and the mammalian fauna, though tolerably abundant, is not nearly so profuse as that of the birds and insects, which are here both developed in far greater luxuriance than in any other part of the world.

This subregion is more especially the home of the peculiar Platyrrhine monkeys, the arboreal sloths, and other tree-loving mammals.

Beginning at the bottom of the list, we find that nearly all the twenty-four species of opossums known from the New World are found within its limits. The peculiarly modified water-opossum (*Chironectes*) occurs all over its area, but also extends into the Central-American Subregion.

Among the edentates the sloths are the most characteristic inhabitants of its forests. But two peculiar genera of armadillos (*Xenurus* and *Priodon*) are confined to the subregion, and several other species of this group occur there. All three genera of ant-eaters are also here met with.

Rodents are very abundant in this subregion, but, with the exception of squirrels (*Sciurus*), vesper-mice (*Hesperomys*), pouched mice (*Heteromys*), and a single hare (*Lepus*), they all belong to the Hystricomorphine group, which is so highly developed in the Neotropical Region.

The Guiano-Brazilian Subregion is also the special home of the Phyllostomine bats. Out of a total of about sixty-five species of this family forty-four are found in this subregion, and the greater number of them are confined to it. Such, too, is this the case with the Platyrrhine monkeys. The marmosets (*Hapalidæ*) would be also unknown outside the limits of the subregion had not a single species, as already mentioned, overstepped the northern boundary at Panama. The capuchins (*Cebidæ*), numbering more than sixty species and belonging to ten genera, are

likewise abundant, and are found elsewhere only in the Central-American Subregion.

The following table shows at a glance the numbers of (1) the "Endemic" genera of this subregion, *i.e.* those not found beyond its limits; (2) the "Neotropical" genera, *i.e.* those confined within the limits of the whole region; (3) the "American" genera, *i.e.* those occurring in other parts of the New World, but not beyond; and (4) the "Cosmopolitan," *i.e.* those of general distribution:—

	Marsupials.	Edentates.	Ungulates.	Rodents.	Carnivores.	Insectivores.	Bats.	Monkeys.	Total.
Endemic ...	0	2	0	9	1	0	11	7	30
Neotropical	1	6	0	8	1	0	23	5	44
American ...	1	1	2	0	4	1	1	0	10
Cosmopolitan	0	0	1	3	4	0	3	0	11
Total ...	2	9	3	20	10	1	38	12	95

Sect. 7.—The Patagonian Subregion.

The Pa'agonian Subregion may be most conveniently taken to begin on the south side of the bay of Guyaquil, and to extend thence southwards, embracing the whole western slope of the Andes of Ecuador and Peru. In Bolivia it widens out and includes the high plateau of Titicaca, extending thence over the whole of the Argentine Republic, Chili, and Patagonia.

The most characteristic form of the mammals of this subregion is the lama, which, with its allies, constitutes the genus *Auchenia*. Four forms, usually regarded as distinct species, are recognized by naturalists. Of these two, the lama (*Auchenia glama*) and the alpaca (*A. pacos*) are only met with in a domestic state, and are very variable in size and colour. Of the other two, which are met with wild, the guanaco (*A. huanacus*) has the most extensive distribution, ranging from the highlands of Ecuador and Peru, along the Andes, to the open plains of Patagonia; while the vicugna (*A. vicugna*), which is a somewhat smaller animal, is found only in Ecuador, Peru, and Bolivia.

In addition to the lamas, this subregion possesses a species of thickly haired mountain tapir, differing from the lowland forms, and two or three peculiar deer, of the subgenus *Furcifer*, which are likewise densely furred. A third diminutive deer found in Chili is distinguished from *Cariacus*, the ordinary American form of deer, by anatomical characters, and belongs to a special genus, *Pudua*.

The rodents of the Patagonian Subregion almost all belong to the Hystricomorphine section of the order. Amongst them are the chinchillas (*Chinchilla* and *Lagidium*), noted for their delicate fur, the viscacha (*Lagostomus*), and the Patagonian cavy (*Dolichotis*). Out of the eighteen genera of this division known to occur in the Patagonian Subregion, ten are restricted to it.

Of the carnivorous mammals of this subregion, one of the most interesting is the spectacled bear of the Andes (*Ursus ornatus*), which affords an instance of that rare phenomenon in nature "discontinuous distribution," the nearest allied species of bear (the black bear of North America) only coming as far south as Mexico. The presence of a bear in the Andes can only be explained by the supposition that the ancestral form migrated southwards along the line of the Cordilleros, but has died out in the intermediate district. The bats of the Patagonian Subregion present but few features of interest; they are, with one exception, all of genera found also in the Guiano-Brazilian Subregion.

As might have been expected from the dearth of forests and the generally severe climate, the American monkeys and marmosets are entirely unrepresented in the Patagonian Subregion. On the other hand, at least two small species of opossum (*Didelphys* and *Dromiciops*) occur in Chili, and a very remarkable form of armadillo (*Chlamydophorus*) is peculiar to Western Argentina and the high plateau of Bolivia.

The following list of the mammal genera of the Patagonian Subregion is constructed on exactly the same plan as that of the preceding tables:—

	Marsupials.	Edentates.	Ungulates.	Rodents.	Carnivores.	Bats.	Total.
Endemic	1	2	2	10	1	1	17
Neotropical ...	0	2	0	7	2	5	16
American ...	1	1	1	0	1	2	6
Cosmopolitan ...	0	0	1	1	4	2	8
Total ...	2	5	4	18	8	10	47

Sect. 8.—The Past History of the Neotropical Mammal Fauna.

During the last few years our knowledge of the extinct mammals of the Neotropical Region has been enormously increased by the discoveries of the palæontologists of the Argentine Republic, more particularly by the labours of Burmeister, Moreno, and Ameghino. A few words about this branch of the subject may be added.

The oldest formation containing well-preserved remains of mammals yet investigated is in the neighbourhood of Santa Cruz, in Southern Patagonia, where the deposits are about 200 feet in thickness. The exact age of the Santa Cruz beds it is very difficult to determine, but the best authorities consider that they cannot be of earlier date than the Upper Eocene or Oligocene of Europe. Following these in point of time are the so-called "Patagonian" beds of Patagonia and Uruguay, which are probably of Miocene age. The "Araucanian" formation of Ameghino, which is well developed at Monte Hermoso, near Bahia Blanca, in Southern Argentina, seems to correspond approximately with the older European Pliocene. Finally, the later Pliocene is apparently represented by the "Pampas" formation of Argentina and Uruguay. Our knowledge of the extinct mammal-faunas of these beds is mainly due to the efforts of the Argentine palæontologists just mentioned, but a clear *resumé* of the work done will be found in a recent number of the *Geological Magazine* (12).

In the "Santa Cruz" beds have been found remains of about one hundred and twenty genera of mammals referable to the following orders:—

Marsupials.	**Perissodactyles.**	**Rodents.**
Edentates.	**Toxodonts.**	**Primates.**

Among the marsupials the most prominent forms in this formation are the opossums (*Didelphyidæ*), which are still found all over America, and in Tertiary times appear to have been distributed nearly all over the northern hemisphere. But accompanying these are other forms of the same order, which seem to be more nearly related to the Australian marsupials of other families; in fact, Ameghino has placed some of them in the (hitherto supposed to be) exclusively Australian family *Dasyuridæ*.

The fossil edentates of this formation are all of the American section of the

group. The Perissodactyle Ungulates are represented by two families (*Proterotheriidæ* and *Macraucheniidæ*) not very definitely connected with other perissodactyles, and unknown elsewhere; and the toxodonts (another group forming a distinct suborder of the Ungulata) are also quite unrecognized outside South America, where, indeed, they appear to have existed for a short period only.

The rodents of this formation all belong to the Hystricomorphine section of the order, and the primates are all platyrhine, so that, except in the case of the marsupials, where the results are to a certain extent doubtful, no clue to the origin of the Neotropical fauna is shown by this extinct fauna. When these results are compared with the Eocene mammal fauna of the northern hemisphere, the absence of artiodactyles, insectivores, bats, carnivores, and lemurs, is very striking.

The "Patagonian" beds contain a mammal-fauna only to be distinguished from the previous "Santa Cruz" series by a further differentiation of genera belonging to the same orders without any traces of foreign admixture. When, however, we reach the more recent Araucanian formation, we find, in addition to the edentates, toxodonts, and other typical South American forms, a number of foreign intruders, such as tapirs, lamas, elephants (*Mastodon*), and wild dogs (*Canis*), of an entirely different aspect. There can be little doubt that these animals had migrated here southwards from North America, where their remains (or those of closely allied species) have been likewise found in the nearly contemporaneous formations of the United States.

Moreover, it would seem that in these bygone days, not only did the northern forms move southwards, but that also some of the southern forms emigrated northwards. This is evidenced by the fauna of the so-called "*Equus* beds" and "*Megalonyx* beds" of a slightly later date in the United States, which contain a composite mammal-fauna of northern forms mixed with forms usually considered to be exclusively South American—such as the gigantic armadillo-like *Glyptodon*, the capybara (*Hydrochœrus*), *Toxodon*, and others.

Finally, in the age of the "Pampas" beds, the peculiar South American mammal-fauna seems to have reached its culminating-point, and to have far exceeded that of the present day both in number of species and in the size of the individuals. This great increase in size, which is, as a rule, accompanied by an extreme specialization of individual organs, seems to have had a fatal effect on its possessors, as none of the larger edentates or toxodonts appear to have outlived the end of the pampas formation. Along with most of the larger arrivals from the north, such as *Mastodon* and *Equus*, they became extinct. All the conclusions to be derived from this much-abbreviated account of the extinct mammals of South America, confirm in a remarkable way the evidence of the present fauna as to this history of the Neotropical Region. Up to the last period of the Tertiary epoch, South America was certainly isolated from the rest of the world, and the connections with Australia and with Africa, if they ever did exist, must have been previous to this period. At the beginning of Pliocene time, during the deposition of the Araucanian formation in Argentina and the "Equus" beds in the United States, a wide bridge between North and South America, affording an easy road to migrating animals, must have existed, and this again seems to have become considerably narrowed to form the present Isthmus of Panama.

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THE MONTHLY RECORD.

THE SOCIETY.

The Anniversary Dinner.—It has been decided to postpone the Anniversary Dinner to Tuesday, July 30, the object being that it may coincide with the meeting of the International Geographical Congress. The Society will thus be able to show some hospitality to the Government delegates and distinguished geographers who will be in England then. In order that the Congress may prove a success, a further sum of £1500 is required, in addition to what has been subscribed. It is hoped that many of those Fellows who have not subscribed will see their way to doing so without further delay.

EUROPE.

Evaporation in Central Europe.*—At a recent meeting of the Austrian Meteorological Society in Vienna, Professor Penck communicated the results of researches on the amount of evaporation taking place over extensive land-surfaces. Direct measurements of evaporation have been made in Austria and Bavaria since 1821, and in Prussia since 1876, by means of various types of evaporometers, of which the most recent and satisfactory is that of Wild, and observations are now forthcoming from forty stations in different parts of Central Europe. It seems that the average yearly evaporation in North Germany amounts to 15·7 inches; and that further to the southward a decrease to about 11·8 inches (at Dresden) takes place; then again a slight increase, and a final diminution near the slopes of the Alps and Carpathians. In the Hungarian plain the evaporation is much greater, amounting to 25·6 inches at Budapest, and still more in the south-eastern districts. The observations do not afford satisfactory information concerning the influence of elevation, but the effect of forests is clearly marked by an almost uniform decrease in all cases of 60 per cent., compared with the open country round about. A remarkable increase is noticed in towns—the evaporation in

* Communicated by our Vienna correspondent, Dr. K. Peucker.

Vienna, for example, exceeding that in the immediate neighbourhood by as much as 5·9 inches. Perhaps greater reliance may be placed upon the classification of monthly curves of evaporation, inasmuch as these are, to a great extent, independent of the class of instrument used. Professor Penck divides Central Europe into districts according to the month of maximum evaporation:—Western North Germany, one maximum in May; Eastern North Germany, one maximum in June; Western South Germany, two maxima, May and July or August; German districts near the Alps, Bohemia, northern slopes of the Carpathians, one maximum in July. Here again the influence of forests is noticeable for its constancy—all the forest stations show a maximum in May. However valuable the evaporometer observations may be for many purposes, they undoubtedly fail to measure the amount of evaporation actually taking place from a land-surface, as has been shown in England by the employment of similar instruments on streams, on ponds, and on different classes of soil. In order to estimate the total aqueous vapour passing into the air over a large area Professor Penck falls back on the method of estimating the total rainfall, subtracting from it the total calculated discharge by rivers, and reckoning the difference as amount evaporated. For the north-west German river basin Professor Penck obtains an annual mean of 15¾ inches; on the Saale, 16¼ inches: and Dr. Ruvarac, in an as yet unpublished memoir, gives for the basin of the Elbe, in Bohemia, 19¾ inches nearly. These results, which are confirmed by similar investigations dealing with Upper Austria (Traun and Enns), show that the amount of evaporation is not wholly controlled by the air-temperature and prevailing winds, but also to some extent by the rainfall itself.

The Free Port of Copenhagen.—Particulars are given as to the new free port of Copenhagen in a recent report of Mr. C. S. Scott to the Foreign Office. The port has been established in conformity with a law passed in March, 1891, and within its boundaries no customs duties of any kind will henceforth be levied. The port dues for ships outward bound will also be abolished, while, instead of the port dues for foreign shipping entering the port, a tax on goods entering the customs harbour, both from the free port and elsewhere, in accordance with certain fixed regulations, will be levied. The works connected with the port have been carried out by the Harbour Board, and the necessary buildings have been erected by the Free Port Company, the receipts being derived from rent of buildings and land, payments for use of cranes, etc. The payments (quay money, pilotage, etc.) for a steamer of 1000 registered tons, inward bound with full cargo and outward bound with part cargo, are estimated at about £14 sterling.

ASIA.

Mr. Littledale on the Death of M. Dutreuil du Rhins.—We have received from Mr. St. George Littledale a letter, dated "Kashgar, January 10," giving an account of the death of M. Dutreuil du Rhins, similar to that given on the authority of Dr. Sven Hedin in the April number of the *Journal*. Mr. Littledale hoped to start in five or six days; he was awaiting the arrival of four Punjabis, who were being sent from India for his expedition.

AFRICA.

Dr. Donaldson Smith in Somaliland.—We have received the following note from Mr. Gillett, Dr. Donaldson Smith's companion on his expedition to Lake Rudolf: "As I have just returned from Dr. Donaldson Smith's expedition, it may be of interest to the Fellows of the Geographical Society to hear a few words about Dr. Smith. I left him at Bari, on the Webi Shebeli, just after he had received a fresh supply of cloth and money from the coast. The expedition was in an excellent condition for its long journey to Lake Rudolf; there were plenty of spare camels

and any amount of trading goods, so that things ought to go along smoothly. I have been asked several times if there was not considerable danger of the Abyssinians interfering again; I think not. The line of march will be outside a radius of 200 miles from Ginmish, the Abyssinian fort, and, as Dr. Smith himself wrote to the papers, the Abyssinians would be coming into a hostile country, so that it is to be hoped that the expedition will prove most successful. Dr. Smith's last words to me were, he should make for the lake and return as quickly as possible, so that he may be looked for from three to six months from now. The only thing that I could see which might prove a difficulty was that the men were being attacked one by one by the fever that haunts that part of the Webi Shebeli, but, with the fresh supply of quinine which Dr. Smith also received from the coast, it is to be hoped he will succeed in getting the men on their legs again quickly. The crossing of the Webi by such a large caravan for the third time will probably contain many exciting adventures, as the river at that part swarms with crocodiles. As regards my journey home, I believe I came by the most direct road between Bari and Berbera, and one that up to the present has not been traversed by any other European as far as I can make out. It has many objections, however, one being the scarcity and foulness of the water. From the time of leaving the Webi till we reached the wells of Sehr, on the coast side of the Haud, two days from Berbera, the water stank. Another drawback was that there were very few people, the first villages that we met being only four days from Berbera in the middle of the Haud. The road, however, was excellent; except a very steep hill close to the Webi and the Terratto road near Mandarro, it was excellent going for the camels the whole way. There was very little game except near the Webi, where I saw quantities of water-buck, oryx, and Soemering gazelle at the same time. The country bore the ordinary Somali aspect—sand and thorn bushes, with open bunds or plains. The Tug Faf was the only important one we crossed, well clothed on its banks with a variety of vegetation. The wells between the Webi and the Haud bore Galla names, and were, I believe, made by a race prior to the Somals. The Haud on this road takes six long days to cross. The wells of Guorarti contained very little water, and some others about an hour further on were not much better. After leaving them there is no more water till the wells of Sehr are reached, where the water is excellent and abundant, the Tug being full of wells. The plain of Tugu, in the centre of the Haud, is a continuation of the plain of Silo, between Milmil and Hargeisa. The villages camped in it levy toll from passing native caravans. I accomplished the journey between the Webi Shebeli and Berbera in seventeen and a half days, but this, as my boys expressed it, is 'debbil marching;' but I firmly believe it to be the shortest and best road to the Webi."

Geographical Names in Somaliland.—In a notice published in the *Bollettino* of the Italian Geographical Society, objection is taken to Dr. Donaldson Smith's bestowing the names "Smith" and "Gillett" upon the Webi Shebeli and Web, not discovered by him (see *Geographical Journal*, v. p. 125). We quite agree with the writer of the notice, that the practice of giving European names to the rivers and lakes of Africa should be more honoured in the breach than the observance. If a European name at all is to be given to the first of the above-mentioned rivers, it surely is that of Haines; for, although a river flowing "at the back of Barawa" was heard of by the early Portuguese, it was Lieutenant Christopher who first reached its lower course in 1843, and who named it after his distinguished superior, Captain Haines of the Indian Navy.

German South-west Africa.—In the supplement to the *Deutsches Kolonialblatt* for 1894, which consists of a series of memoirs on the various German colonies, the section dealing with South-west Africa contains papers by Drs.

Hindorf and Dove on the economic value and prospects of settlement in that protectorate. Having regard to the contradictory estimates hitherto formed on these subjects, an impartial study of the question, based on undoubted facts, such as the memoirs in question appear to be, will be found of much value. Both writers take a middle course between the extravagant hopes and undue depreciation which have been indulged in in various quarters, and show that the territory does undoubtedly possess resources which are worth developing. Dr. Hindorf was confirmed in this opinion by a tour through the Cape Colony, Orange Free State, and Transvaal, which led him to think that, on the whole, the conditions there were not a whit more favourable than those in the central part of the German territory. German South-west Africa is, he says, pre-eminently a country for cattle-rearing; and he makes some practical remarks on the conditions under which it may be carried out, and the possibility of introducing foreign species, such as the Angora goat, which he thinks might do well in suitable localities, and which in some ways has an advantage over the sheep. Dr. Dove discusses the question of the class of settlers most likely to succeed in the country, and comes to the conclusion that although to a limited extent small holdings for garden-cultivation, etc., might be successful, it is principally settlers possessed of a fair capital, who could start cattle-farms on a considerable scale, who are likely to do best. Both writers refer to the advantages which the country possesses over tropical colonies, from the fact that, owing to the purity and dryness of the air, Europeans can work in the open, and undergo physical exertions of all kinds without detriment to health. Among other points, Dr. Hindorf deals with the question of communications, and considers that although the practice of agriculture on a large scale in the fertile districts of the interior would necessitate the construction of a railway, the present means are sufficiently good to allow of settlement of a kind adapted to the general conditions of the country.

AMERICA.

Northern Canada.—Some very interesting particulars of the conditions of animal life in the extreme north of North America are given in the January number of the *American Naturalist*, where the recent journeys of Mr. Frank Russell, of the State University of Ohio, are briefly described. Mr. Russell spent the autumn and winter of 1892 near the north end of Lake Winnipeg, collecting specimens and studying the Indians. In May, 1893, he went in a Hudson Bay Company's boat to Fort Chippewayan, on Lake Athabasca; and in July reached Fort Rae, on the north-western extremity of the Great Slave Lake, which was his base until May, 1894. From this centre he made numerous trips into the Barren Grounds. During the winter many caribou were secured, but all attempts to find the wood-buffalo failed, although one or two specimens were reported by Indians; Mr. Russell is inclined to think that this animal has been very nearly exterminated. In the spring of 1894 he made his way with the Indians, though much against their will, to the Musk Ox hills, near Bathurst Inlet, in order to shoot musk-oxen, following presumably the route taken by Mr. Warburton Pike. Then, returning to Fort Rae, he went round the north coast of Great Slave lake westward to Fort Providence, finding that the map of that part of the lake was very defective. Proceeding in a steamer down the Mackenzie river for some distance, and then in company with Comte de Sainville, he continued in canoes to the Arctic Sea, and navigated these light craft through the ice-floes to Herschell Island, where the American whaling fleet was found. After spending two months in collecting, Mr. Russell and his companion returned in the whaler *Jeanette* by Bering Strait, and reached San Francisco on October 27. This journey of solitary scientific

exploration lasted two years, and the brief record of it which we have seen bears abundant evidence of the perseverance and success of the explorer.

Lake Superior.—In the note in our February number of this volume, p. 173, on the new Sailing Directions for Lake Superior, the alleged instances of careless revision which are cited are examples of hasty reading on the part of the compiler of the note. The sentence in the 'Sailing Directions' about total depth is correctly expressed, and the Canadian canal is noticed, although not under a special heading. We take the first opportunity to correct the mistaken criticism.

Maps of the District of Columbia.—In the *National Geographic Magazine* for November, 1894, Mr. Marcus Baker gives an interesting account of the various surveys which have been made of the Federal district in which the city of Washington is situated. This was planned in 1790 as a square 10 miles in the side, with the angles directed to the cardinal points; and in the two following years it was laid out, a lane 40 feet wide cut through the forests, and inscribed stones set up at intervals of a mile. On the inner side each milestone bore the words "Jurisdiction of the United States;" on the outer side the name of the bordering state, "Maryland," or "Virginia;" on the third side the date of erection, and on the fourth the variation of the compass, which now forms the earliest record of magnetic variation in the district. The exact triangulations recently made by the Coast and Geodetic Survey show that the original surveyors did not make a very good approximation to the square they tried to mark out, for all the sides are longer than 10 miles, the north-western being 63 and the south-eastern 70·5 feet in excess, while the south-western and north-eastern sides are 230·6 and 263·1 feet respectively too long. The mileposts also were somewhat irregularly placed. An account is given of the laying out of the first meridian, which should have formed the diagonal of the square, and which is almost 77° W. of Greenwich; and a number of interesting historical notes as to early and recent maps are supplied. A German draughtsman named Boschke, who was in the Coast Survey Office before the Civil War, made an elaborate survey at his own expense with the view of selling it to the Government; but the speculation was disastrous, as it led, in the first instance, to his dismissal for neglect of official duty, and, on the outbreak of the war, the Government seized the plates of the map, which had just been engraved, and afterwards paid a very small sum in compensation. The Geological Survey topographical map of the district of Columbia is on the scale of approximately 1 inch to 1 mile, and is contoured at 20-feet intervals. The Coast and Geodetic Survey map, not yet issued, is completed on the scale of 13 inches to 1 mile, in 100 sheets.

The United States and Mexican Boundary.—This boundary, which was marked under the treaty of 1853 by 52 monuments, was in 1891 re-marked by a joint commission of the two nations, and an account of the work, as summarized by Mr. A. T. Mosman, one of the U. S. Commissioners, at a meeting of the National Geographical Society in Washington, appears in *Science* for March 29 last. It had been agreed that any of the old monuments recovered should still be utilized, and out of the total of 52, 38 were found standing (including all those at which the line changed direction), but were not always accurately placed, so that the boundary follows a broken line in places. A great number of new monuments were erected, the rule being that a greater space than 5 miles should in no case intervene between them. Between El Paso on the Rio Grande and the Pacific the number is now 258. The advantages of modern methods, especially the determination of longitudes by telegraphy, was strikingly shown, though the old work (by Emory) proved to be remarkably good for the method then employed. For the latitudes (as was originally intended for the longitudes also) independent determinations were made by the commissioners of the two nations, and the results agreed very satisfactorily, the

maximum difference in the location of the monuments amounting to only 1·8 m., and this in a very difficult country. The determination of intermediate points by the *stadia* also proved very satisfactory, the difference in one line of 45 miles measured over rolling sandhills amounting to one part in 1800 only.

POLAR REGIONS.

Peary's Visit to the Cape York Ironstone.—The existence of a mass of meteoric iron near Cape York, in North-West Greenland, from which the Eskimo have been accustomed to detach fragments for the manufacture of rough knife-blades, has been known since the date of Sir John Ross's expedition in 1818; but until Lieut. Peary's visit to the spot in May and June of last year, no traveller had succeeded in discovering it. The enforced early return of his expedition of 1893–94 to head-quarters, gave him the wished-for opportunity of visiting Cape York, and an account of the trip is to be found in the *Bulletin* of the American Geographical Society (vol. 26, No. 4). From Inglefield Gulf Lieut. Peary and his companion, Mr. H. J. Lee, proceeded on sledges along the coast, doubling Capes Parry, Atholl, York, etc., and experiencing great difficulties from constant snow-storms and the daily enlarging cracks in the ice. At last the head of the eastern arm of the bay east of Cape York was reached, and a single fine clear day facilitated the search for the stone, which was laid bare by the Eskimo guide by excavation in the covering of snow. It is of a rounded trapezoidal shape, with a maximum length of 4 feet 6 inches, the highest part projecting 15 inches above the ground. Its surface is dark-brown rust colour, interspersed with small greenish pits. It is apparently a mass of pure iron, easily cut with a knife, and wherever scraped presents a bright silvery lustre. The ground near was covered with fragments of blue trap brought by the natives for the purpose of detaching scales of the metal. A second stone about 7 miles distant was searched for, but not discovered, and a third also is said to exist to the eastward. On the return journey, the increase in the amount of open water necessitated frequent deviations from the coast-line in order to pass the various promontories, and numerous glaciers were crossed, one of which, the Petowick glacier, close to Cape Dudley Digges, is thought by Lieut. Peary to offer exceptional advantages for the study of glacial characteristics in those latitudes. On the outward journey the glaciers of Barden Bay, at the entrance to Whale Sound, were found to have decidedly changed since Hayes' visit. The cliffs along a considerable part of the shore were found swarming with bird life—little auks, loons, kittiwake gulls, etc.—in numbers which appeared almost inconceivable.

"An Artistic Expedition to the North Pole."—Mr. F. W. Stokes writes from Philadelphia to point out that Herr Julius von Payer will not be the first who has visited the Polar Regions for artistic purposes. Mr. Stokes has done so himself, and so have several others whose names could be mentioned. But, so far as we know, Herr von Payer will be the first to fit out a great expedition for the purpose of spending a whole year or more in a high latitude with a view to the artistic study of Arctic conditions in all of their many aspects.

Antarctic Exploration.—Baron Nordenskjold, writing to a correspondent, states that his nephew, M. Otto Nordenskjold, intends to take part in a private expedition on a small scale to explore Antarctic lands in the course of the present year. The expedition will probably visit Tierra del Fuego.

GENERAL.

The Russian Geographical Society's Yearly Report for 1894.—At the meeting of the Russian Geographical Society, January 30, the yearly report of the

Society was read, and the medals awarded were distributed. It appears that three expeditions were at work during the past year in Central Asia, under MM. Obrucheff, Roborovsky, and Berezovsky. V. A. Obrucheff is already back from his two years' journey, after having performed a most brilliant exploration of the borderlands of Tibet and of Eastern Tian Shan. Altogether, he has covered about 9400 miles, and the result is, that we now have for the first time a geological knowledge of the whole region, while a great deal of most valuable and varied information has been collected at the same time. To the highest range, discovered by him, the Society has decided to give the name of "Alexander III.'s Range." The second expedition, under Roborovsky, has explored the oasis of the Luk-chun depression, which is from 330 to 500 feet below the level of the ocean. In order to determine its altitude with more exactitude, a meteorological station has been established there, and a careful survey and levelling of the depression itself has been made, from which it appears that it has a length of nearly 100 miles, and a width of about 50 miles. From Luk-chun the expedition proceeded to Sa-chau, and made interesting observations and surveys in the desert situated on the south of Luk-chun, where no less than six wild camels were obtained. Excursions were also made from Sa-chau to the Nanshan highlands, and extensive surveys were made in that region as well. Last spring the expedition left the Chinese town for the explorations in the east of Koko-nor. M. M. Berezovsky has worked, during the past year, in the south-western provinces of China, and last autumn he began his return journey to Russia. In Turkestan and the Transcaspian territory, the well-known French geodesist, M. Desforges, has made, at the invitation of the Russian Geodetical Bureau, pendulum observations, with the view of establishing a connection of the French with the Russian measurements. He has completed a series of measurements with his pendulum at Pulkova, Tashkent, Bokhara, Uzun-ada, and Tiflis. In the far north of Siberia, an expedition which was sent out by the Hydrographical Department under A. I. Vilkitsky, has made surveys in the Yenisei Bay, and along the coast towards the Gulf of Ob, as well as up the lower Yenisei. Pendulum measurements have been made, moreover, by M. Vilkitsky at Yeniseisk, Golchikha, the mouth of Yenisei Bay, and Port Dickson, in 73° N. latitude. Besides, Baron Sterneck, who has visited Russia for the purpose of connecting the Austrian pendulum observations with the Russian ones, has made measurements at Pulkova and Moscow; while Dr. Fritsche made about 120 magnetical measurements, for a detailed magnetical survey of the region where the well-known pendulum anomaly occurs in the neighbourhoods of Byelgorod, in the government of Kursk. In the south, an expedition of the Society, consisting of four explorers, was at work in the Sea of Marmora, for a careful exploration of the hydrology and animal life of that interesting basin. Several expeditions were at work within Russia itself, the chief of them being under Th. M. Istomin, for collecting the music and the words of popular songs. Three aëronautical ascensions were made in connection with the German aëronautical Society for the exploration of the higher regions of the atmosphere; and E. S. Markoff has explored and made soundings of Lake Gokcha in Caucasus. The report finally mentions the expedition undertaken by M. Leontieff to Africa, under the patronage of the Geographical Society. At the same meeting the following medals were awarded: The great Constantine medal, to S. N. Nikitin, for his many and varied works on the geology of Russia; the Count Lütke medal, to Colonel P. K. Zalessky, for his many years' geodetical work in Turkestan; the great gold medal of the Society, which was awarded this year by the Section of Statistics, to N. A. Karysheff, the author of an excellent volume on the land rented by the peasants in addition to their allotments (vol. ii. of the 'Results of the Economical Study of Russian according to the Data afforded by the Zemstvos

Statistics'); the Prjevalsky premium of 600 roubles, to V. A. Obrucheff for his journeys in Central Asia; small gold medals, to the French geodesist, M. Desforges, and the Austrian geodesist, Baron Sterneck, for their pendulum observations in Russia, and to M. Sieroszevski, for his manuscript work on the Yakuts; the great silver Prjevalsky medal, to Baron Toll and Lieutenant Shileiko, for their explorations in Arctic Siberia; and eleven silver medals, to eleven different persons for various minor works. Nearly £2500 have been spent during the past year for scientific expeditions, and the capital of the Society amounted on December 1 to £13,625.

OBITUARY.

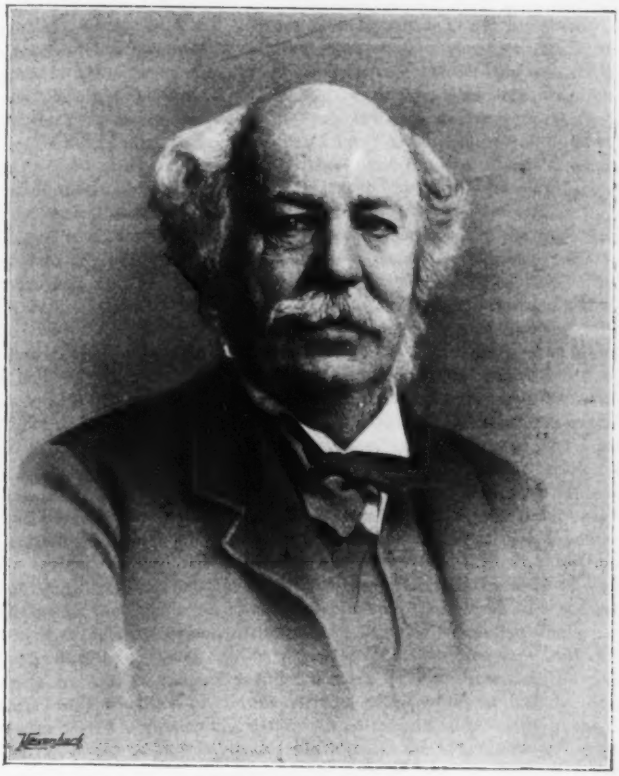
Major-General Sir Henry Creswicke Rawlinson, Bart., G.C.B., etc.

By Major-General Sir Frederic J. Goldsmid, K.C.S.I., C.B.

The remark that the death of this distinguished soldier, scholar, and diplomatist leaves a gap which cannot easily be filled, may sound like a repeated platitude, but is nevertheless a plain truth, whether applied to military, learned, or political circles. When the remains of the deceased officer were laid in the Brookwood cemetery, early in the past month, how many mourners must have felt that a mine of lore and learning was thenceforth lost to the ken of his surviving fellows, and that a rare and high idiosyncrasy had passed away from man's nether world which it was enabled, from its exceptional character, to instruct and influence! It is here proposed to sketch, briefly and in outline, a career already doubtless in some shape recalled, by the circumstance of its close, to numbers of admirers both at home and abroad. Seeking in the main to summarize, we shall venture to pause upon two or three salient points.

Henry Rawlinson, son of Mr. Abram Rawlinson, of Chadlington Park, Oxford, and his wife, a Gloucestershire lady, was born at the family residence on April 5, 1810. Educated at Wrington in Somersetshire, and Ealing in Middlesex, he was nominated to an Indian cadetship, and, in accordance with his appointment to Western India, he proceeded by ship to Bombay in 1827, a fellow-passenger with Sir John Malcolm, the new Presidency Governor. A choicer example, or fitter association for a cadet about to enter on his professional career, could not well be imagined, and its effect must have been more than transitory. One of its results, in the present case, may well have been an early application to the study of native languages, in the acquirement of which young Rawlinson showed such singular aptitude, that he obtained the interpretership of his regiment in less than a year after joining. Five years' service with the corps had constituted him a smart regimental officer, a bold, good rider, and withal a clever linguist—one, indeed, available for any special, detached duty, such as the disturbed state of Central Asian politics and the incomplete expansion of our Northern Indian frontier might demand at the hands of Indian officers. It was thus quite in the natural course of things that he should have been selected as one of the new band of instructors whom Lord William Bentinck thought expedient to send to Persia for organizing the Shah's army. The nature, together with the practical uses of the work he was called upon to do, and the mode in which he performed it, may be inferred from these, his own comments on a lecture * by the present writer, at which he did the lecturer the honour to preside, in 1879:—

* "Persia and its Military Resources," at the Royal United Service Institution, March 7, 1879.



SIR HENRY C. RAWLINSON, BART.
(*From a Photograph by Mayall.*)

"It is now forty-five years since I first went to Persia, where I served for five years in the Shah's army, and of course acquired a good practical acquaintance with the country, and especially with its military resources. . . . The particular occasion which gave me such a good opportunity of testing the value of the military resources of Persia was my being deputed to one of the frontier provinces for the purpose of raising three or four infantry regiments from amongst the tribes of the neighbourhood. I had to work *ab initio*; from the first enlisting of the men in forming them into squads, companies and regiments, and ultimately bringing the brigade up to head-quarters to join the army of the Shah. . . . The physique of the men is admirable, and their power of endurance is great; the absence, again, of all habits of intemperance is very important, while the general intelligence and personal courage of the men is beyond all praise. . . . If the Persian material . . . were placed at the disposal of a European power who would encourage and take care of the men, and develop their military instincts, a fine working army, very superior, in my opinion, to anything that Turkey could produce, might be obtained in a very short period of time. The tribes, indeed, on the western frontier, those inhabiting the range which runs from Ararat to Shiraz, are the very *beau ideal* of military material, the men being athletic, strong, hardy, and active."

Colonel Sheil, an excellent authority, bears testimony * to the high reputation of the two regiments formed from "the two famous Lek tribes of Kalhor and Gooran, which were at one time commanded by Sir Henry Rawlinson." But Kaye relates, in a footnote to his 'War in Afghanistan,' another passage in the young officer's early experiences of Persia, which will more directly raise the estimate of his personal qualifications as a soldier. Towards the close of 1837, when Muhammad Shah and his troops were hovering about Herat, Sir John McNeill had occasion to despatch Major Rawlinson from Tehran, to transact some urgent business in the royal camp. On the last morning of his ride, which is described as one of "more than 700 miles in a week," he chanced to come across Vickovich, the mysterious agent often mentioned in Burnes's Kabul despatches. The historian's romantic story need not here be repeated. Suffice it to say that Rawlinson's sense of duty prompted him to hurry back and make verbal report of the occurrence to the Envoy, which he did in "a second ride of 750 miles in 150 successive hours."

To the geographical results of the military mission we shall revert later on. Its work in Persia terminated when, in 1838, the British Envoy broke off diplomatic relations with the Shah's government, and ordered the officers who had been lent to it by the Governor-General to proceed to Baghdad *en route* to India. Arrived in India, Rawlinson was at once in request, and his services were utilized for the campaign in Afghanistan. Travelling through Sind to Kandahar, he proceeded, agreeably to instructions, to join Sir William MacNaghten at Kabul. From that city, after narrowly missing association with Stoddart and Conolly in the ill-fated mission to Bukhára, he was recalled south to fill the honourable and responsible post of political agent at Kandahar. The date of this appointment is stated in the official record to be October, 1840, and we find on the same authority that he returned to India "with the avenging army," through Kabul and the Punjab, in 1842.

Major Rawlinson's tenure of office at Kandahar involved no sinecure, for the daily occurring events were such as to tax his powers to the utmost. Fitly to discharge the responsible duties assigned to him, he required both moral and physical courage to deal with present emergencies and complications, and forethought

* Lady Sheil's 'Life and Manners in Persia.' Additional notes, p. 383 (Murray: 1886).

in anticipating possible results. With the Duráni chiefs, whose well-being we had seemed to promote by our support of Shah Shirja, he had an especially difficult game to play. At one time his part was to temporize; at another, to be openly hostile. Always on the alert, it was incumbent on him also continually to advise and warn his absent superior of existing and coming danger, particulars of which might chance to come within his own range of observation. In a military capacity, he made it his duty to help his comrades in perfecting the inner defences of the town they occupied, or to accompany the troops when engaged with an enemy without the walls. He was, moreover, expected to keep an account of the local revenue, and report upon the expenditure of a court not less troublesome because it was almost nominal. Fortunately for him, he was associated with a commander of high soldierly qualities; so that the coupling of Nott's name with his own, in reference to this critical epoch, is a practice in full acordance with historical tradition, and otherwise familiar as a "household word." The views of each of the two distinguished officers, on receiving orders to evacuate Kandahar, were characteristically expressed in a correspondence dated February 1, 1842. They will be found at pp. 244, 245, vol. i., of the biography of Sir James Outram by the present writer, to whom Sir Henry Rawlinson had written, "You can print the extract from my letter to Nott, if you think it of any public interest."

At the time of Rawlinson's return from Afghanistan, his enhanced reputation as a political and military officer made further advancement in his case a certainty; and in 1843, after some months had been devoted to the adjustment of accounts for which the financial requirements of his position in Kandahar had rendered him responsible, he was appointed political agent at Baghdad, or, in the words of the Foreign Office List, "Political Agent for the East India Company in Turkish Arabia." To this was added the post of Consul in 1844, during which year he was made a C.B., and granted Her Majesty's license to accept and wear the insignia of the Persian Lion and Sun, first class, together with those of the Afghan order of the Duráni Empire, third class. Promoted to Consul-General at Baghdad in 1851, he resigned the appointment and returned home in 1855, retaining in England the honorary rank of Lieutenant-Colonel which had been accorded him within the Ottoman dominions. He was made a K.C.B. in 1856, the year of his nomination to be a crown director of the East India Company, and, moreover, of his retirement from the service. In 1858 he was made a member of the new Indian Council, and in the following year appointed Envoy and Minister to Persia (with local rank as Major-General); but though a *persona grata* at Tehran, he had sound and sufficient reasons for resigning his high position there, and returned home after a few months.

Henceforth Sir Henry Rawlinson became, as it were, an institution in his own country; a leader of Central Asian politicians; a Mentor to Oriental students; a referee on Persian questions to successive administrations, whether Conservative or Liberal. His home work was mainly to turn to account the experiences of his Eastern career of nearly thirty years for the benefit of his fellows, in no small degree across the Channel as at home. In this sense, his teaching may be considered of a twofold character—political and scientific. The former was imparted in speeches before the House of Commons; addresses to societies; and incidental utterances when he happened to be chairman, or one of an audience, at public meetings of a miscellaneous kind. It was also conveyed in writings pregnant with meaning and eloquent in their earnestness and *connaissance de cause*. His 'England and Russia in the East,' described as "a series of papers on the political and geographical condition of Central Asia," published in 1875, is a marvel of wisdom and profundity in respect of theory and statement of facts. Much of its counsel,

however, may be judged too advanced for many even of those who have implicit faith in the author's premisses. Indeed, it may be a question whether the twenty years which have passed since the compilation first appeared did not, to the compiler's own mind, somewhat weaken the force of one or more of his arguments. In any case, the book supplies an invaluable study for all aspirants in Oriental diplomacy. To supplement it with some sort of *résumé* of events which have followed the period of its publication might be wise, but, whatever its bearing on particular details, the precaution need not lessen the general prestige of the author. Independently, too, of his own separate writings, the annotations which he supplied, and which gave lustre to contemporary works—varying in character from the 'Herodotus' of his brother, Canon Rawlinson, to the 'Caravan Journeys' of the *Chasseur d'Afrique*, Ferrier—speak volumes for his erudition and scholarship. As to Sir Henry's scientific teaching, the subject must be subdivided under two heads—linguistic and geographical. To the former we can make little more than passing allusion at the present time, for the question involved is too vast for cursory treatment. But it includes the great triumph of his genius and intelligent perseverance, the labour of his love and, in a great measure, of his life. Breaking ground in 1835, when drill-instructor to Persian soldiers, with the rock-tablets of Behistun (called by Joachim Menant *besitoun*—pillarless), and continuing the decipherment of arrow-headed inscriptions throughout the tenure of his office in Turkish Arabia—a labour supplemented by excavations and archæological research—we find him, for a long series of after-years, presenting contribution after contribution to the literature of Cuneiform through the publications of learned societies. Among his more popular writings, for instance, when he was no longer trammelled with the responsibilities of political employment, may be cited those which represent his share in the six volumes of 'Cuneiform Inscriptions,' prepared for the trustees of the British Museum. Among his less-known papers are "Notes on Tablets containing Bilingual Legends, Assyrian and Phœnician," published in the *Journal of the Royal Asiatic Society* for January, 1864; and "Notes on a newly discovered Clay Cylinder of Cyrus the Great," in the *Journal* of the same Society for January, 1880.* But the number of similar contributions between the two cited years is legion.

Let us now glance at those labours which more immediately concern our Society.

Any attempt in these pages to render an account of Sir Henry Rawlinson's services to geography, by presenting a mere *résumé* of his relations with the Society of which this *Journal* is the organ, were indeed trouble in vain. No statement of the kind could be complete without an exposition of the value of his work; and the accomplishment of such a task would involve a political retrospect as well as a combination of geographical details, each of which would supply material for a goodly-sized volume. But although the unadorned record may be insufficient to satisfy the requirements of critics and connoisseurs, it may possess its usefulness as an obituary notice, in which sense it is now put forward. At the period of his decease, Rawlinson's name had been borne on the list of Fellows for more than half a century, for he had been elected in 1844, and five years before his election he had received the Founder's Medal for "great services to geography" rendered in Persia. These were exemplified in the circumstance that, from 1833 to 1839, he had "explored, with great zeal, perseverance, and industry, the provinces of Luristan,

* Of the small circle gathered in Albemarle Street when this paper was read, some will doubtless remember the ease and earnestness with which its author, cylinder in hand, expounded his theories. Few, if any, of those present could gainsay, nor did any attempt to disprove, his arguments; yet questions such as these can hardly fail to provoke the criticism of scholars.

Khuzistan, and Azerbaijan, and the mountain ranges which divide the basin of the Tigris from the elevated plains of Central Persia."* The historical and archæological research displayed on this occasion by a young officer of the Indian army, otherwise conspicuous for professional ability, were so remarkable, that his qualifications as an explorer were at once generally recognized.

During the early years of his connection, however, with the Royal Geographical Society, absence from England necessarily checked that personal intercourse with its officers and participation in the administration of its affairs, from which it derived so much benefit at a later period. Elected to its Council in 1850, and for the years 1851, '57, '58, '61, '62, '63, '68, he was a Vice-President from 1864 to 1867 inclusive, and for 1869 and 1870; while in 1871 and the following year he was elected President, an office which he again held in 1874 and 1875, having been a Vice-President in 1873. From 1876 to his retirement in 1893, he was borne on the roll of Vice-Presidents or Members of Council. We have shown that his name had been included in the list of our Fellows for more than fifty years; it may, therefore, be added that it was further included in the list of our administrators for nearly four-fifths of that period.

Among the more recent papers which he has contributed to the Society's *Journal* or *Proceedings*, may be mentioned the monograph on the Oxus† and the exhaustive notes on Sistān,‡ as indicative of his unfailing acquaintance with places of which he had made a careful study, but had had no actual personal experience on the spot. But his treatment of the many questions which arose during his occupation of the President's chair showed that he could give his mind to the world's regions generally, irrespective of Persia and Central Asia; and he proved himself a good, all-round bearer of office. At times he may have shown an inclination towards political discussion with regard to certain subjects of the day, which might come before the evening meetings, and on which he held strong opinions. But this was only natural; and he never encouraged any determined infraction of the wholesome rules laid down for his guidance on such occasions. Among the late Lord Strangford's collected writings is an amusing notice of a meeting in February, 1868, under the presidency of Sir Roderick Murchison, when Sir Stafford Northcote (since Lord Iddesleigh), then Minister for India, who was present, was led into rising from his seat to repudiate the projected annexation of an Abyssinian port, which charge was incidentally thrown out in a discussion between Sir Henry Rawlinson and Sir Samuel Baker. But Sir Henry's *strong* point was Central Asia; and herein we may quote more fully the same able critic, Lord Strangford, referring to a former *séance* of the Society: "The extreme and, indeed, unique value of every word which falls from Sir Henry upon any subject connected with Central and Western Asiatic research is, perhaps, less appreciated here than it is on the Continent and in Russia, or than it will be by our children; but what we wish here chiefly to lay stress upon is the direct practice, tendency, and bearing with which he applies his enormous acquired and theoretical lore each time that he addresses the popular meetings of the Society."

Sir Henry Rawlinson, like his colleague in the Council of India—the late Sir Henry Yule—had much knowledge of the works of Arab geographers; and, in the recently issued supplementary catalogue of Arabian manuscripts in the British Museum,§ there is included a private collection of seventy-five volumes purchased

* 'The Fifty Years' Work of the Royal Geog. Society' (Murray: 1881), p. 54.
† *Journal of the R.G.S.*, vol. xlii. p. 482.
‡ *Ibid.*, vol. xliii., 1873, p. 272.
§ Printed by order of the Trustees, 1894.

from his library in 1877. Among these will be found the first, second, and last volume, as also detached portions of the *Mu'jam al Buldān*, or geographical dictionary of Yāḳūt al Hamāwi, together with the same author's dictionary of geographical homonyms. Yāḳūt's abridged dictionary may be added, but Sir Henry warns the intending inquirer into its contents that the transcript has been "execrably performed." A work on general geography by Ibn Sa'īd, written in the thirteenth century, will also be found in the aforesaid category. These copies were made expressly for the collector at Baghdad, Mosul, and Tehran, at various dates between 1838 and 1854. Of Rawlinson's Persian manuscripts in the British Museum, Dr. Rieu pronounces two geographical works to be among the most valuable. These are "the first, and only extant, volume of the geography of Ḥāfiz Abrū, written for Shāhrukh A.H. 820, and containing a full and important History of Khorasan," and "a geographical work, with maps, translated for the Amīr of Jand about A.H. 616, from an Arabic original ascribed to Jaihāni," stated to be "a modern transcript from an old and fine manuscript obtained by Sir Henry at Ispahān in 1837, and lost in the troubles of Afghanistan."

To the honours and distinctions awarded to Rawlinson since 1859, and in addition to those already enumerated, we find a record of the following:—

He is a knight of the Prussian Order of Merit; associate member of the French Institute; hon. member of the Academy at Munich; Hon. D.C.L. Oxford, Hon. LL.D. Cambridge and Edinburgh; D.L. of London; he was made a G.C.B. in 1889, and a Baronet in 1891. He had been member for Reigate in 1858, and sat for Frome in 1865 to 1868. For many years director of the Royal Asiatic Society; he was also a Trustee of the British Museum, F.R.S., and Vice-President of the Royal Society of Literature. He, moreover, attended upon the Shah of Persia on the part of the British Government during His Majesty's visit to England in 1873 and 1879. He married in 1862 Louisa, daughter of the late Henry Seymour, Esq., of Knoyle, Wilts, who died in 1889; and the elder of his two sons, in Her Majesty's army, now succeeds to the baronetcy.

Sir Henry Rawlinson, notwithstanding an occasional *brusquerie* of manner and reserve, was a kindly, genial, and sincere adviser and friend. His hospitality as President of the Geographical or Asiatic Society, or as a mere mover in London society, was large; and at his dinner and receptions, in Lady Rawlinson's lifetime, were met together the most noted of travellers, *savants*, and diplomatists of our own country or from abroad. It has been truly said that, in this exceptionally distinguished officer, "there passed away the most commanding, and certainly the best-known, figure among English Orientalists." * May we not add that his fine presence and practical usefulness will be equally missed among statesmen and geographers?

Admiral Lord Alcester.

By the President.

Admiral Lord Alcester's death, which took place on March 30, was not wholly unexpected. He had been in failing health for some time. In this place it is unnecessary to record his naval services, which are well known and are matters of history. We would rather turn to the geographical phase of our deceased associate's character. Beauchamp Seymour left Eton to enter the navy in 1834, and ten years afterwards he crossed the Pacific from India to South America in the *Thalia*, and joined the *Collingwood* at Valparaiso, as flag-lieutenant to his uncle,

* *Athenæum*, March 9, 1895.

Sir George Seymour. One whose intimacy with him commenced over fifty years ago, would gratefully recall some reminiscences of kindnesses received from Sir George's very efficient flag-lieutenant, because they illustrate, in some measure, that side of his mind which is most interesting to readers of this *Journal*. Like Dampier, Sherard Osborn, and others of our best naval writers, Beauchamp Seymour was a very diligent keeper of his journal—not mere jottings and memoranda, but a valuable record on a carefully thought out plan, first with reference to matters that might be useful from a service point of view, and next as a repository of geographical information. Sir George had brought to sea an excellent library of works relating to the Pacific, which were in constant use by his nephew on board the *Collingwood*. In the foremost cabin, on the starboard side of the main deck, at a little flap table against the gun-carriage, his writing was done, while books of reference were strewn over the side tackle. But the table was not for his use alone. Young friends from the gun-room were allowed to come and read there, and take notes; while Beauchamp, in his off-hand hearty way, pointed out what it was useful to remember in the voyages of old navigators, and explained the importance of comparing what various writers said on a given point, and of forming a judgment from conflicting statements. It was due to the trouble he so kindly took that one, at least, of the frequenters of that cabin first acquired his taste for critical geography. There were occasions, too, when Beauchamp Seymour gave his young companions special lessons on shore; explaining the signs for judging of the shoalness of water in rivers, of the existence of fords, and other matters of a like kind. On a well-remembered occasion when, after a long struggle through dense forest near San Blas, on the coast of Mexico, he was pointing out a ford over the Rio Grande de Santiago, a horseman, followed by a servant and spare horses, rode up to the opposite bank and took the ford. It was his brother Charles, who had ridden across Mexico to visit his relatives. He was afterwards killed at Inkermann.

Beauchamp Seymour had never known his uncle Sir George very intimately until he joined the *Collingwood* in December, 1844. But after a few months the admiral treated him with entire confidence in public matters, and kept him completely *au fait* of all the questions with which he had to deal. They were very far from being unimportant questions. Those were the days of the "Pritchard" embroglio with France, of the negotiations respecting the Society Islands, of the Oregon disputed boundary, and of the American seizure of California. There can be no doubt that Beauchamp Seymour derived great benefit, as regards his after-career, from his constant habit of keeping a journal, and from his diplomatic training under his uncle.

Sir George Seymour was a Fellow of this Society from 1855 until his death in 1870. His nephew, Sir Beauchamp Seymour, joined us in 1872. He was also a member of the Geographical Club, and took special interest in our proceedings during the time that he was Private Secretary to Mr. Childers, and afterwards a Lord of the Admiralty. His shipmates followed his brilliant career with affectionate interest; and it will always be a pleasant memory for one of them, who has much reason never to forget the kindness and friendship of Beauchamp Seymour in years now long gone by, that Lord Alcester should have supported him, and have recalled many half-forgotten incidents of a very happy past, at our Anniversary Dinner last year.

Sir Edward H. Bunbury, Bart.

By the PRESIDENT.

Sir Edward Bunbury's death, in a ripe old age, has removed from among us the most learned and scholarly of our exponents of ancient geography. He was the

second son of General Sir Henry Bunbury, of Mildenhall and Barton in Suffolk, and his mother was a niece of the great statesman Charles James Fox. Sir Henry was educated at Westminster School, where he was the schoolfellow of Lord Lansdowne, Charles Wynn, Ridley Colborne, and the poet Southey; as was his elder brother Charles, the "Master Bunbury" of Sir Joshua's charming picture. But Sir Henry resolved to educate his sons at home. The two elder brothers, Charles and Edward, studied together. The eldest was born in 1809, and, his studies having been interrupted by illness, he was practically in the same stage of advancement in his lessons as his next brother. He was the late amiable and learned Sir Charles Bunbury, eminent as a botanist, and also a good geologist, who died in 1886. Edward was born on July 8, 1811, and the whole business of educating the two boys was undertaken by their parents, a duty discharged with assiduous, conscientious, and loving care. The regular lessons were never long, but much was taught and learned at other times by cheerful conversation, by readings aloud, by encouraging and directing their tastes, and by stimulating and guiding their desire of knowledge. In 1827 they were taken to Italy, where their minds were enlarged by travel, and by the study of the masterpieces of art. At their own home at Barton their artistic taste continued to be trained by the constant sight of many fine portraits and other works of art, including the Ambrosio Spinola of Rubens, and pictures by Luini, Guercino, Salvator Rosa, Domenichino, Vandyck, Ruysdael, Van der Helst, Reynolds, and Romney.

In this instance a home education was a remarkable success, and it would have been difficult to find better-informed men and more agreeable companions than were Sir Charles Bunbury and his brother Edward. The latter was Senior Classic at Cambridge and Chancellor's Medallist in 1833. He was called to the Bar in 1841, and was Liberal member for Bury St. Edmunds from 1847 to 1852. But his taste for classical learning never left him, and he was a diligent and indefatigable student through life. His numerous visits to France and Italy, where he enjoyed the *entrée* to the best and most distinguished society, gave life and interest to his studies, and no one was more ready to impart his knowledge to others through the medium of pleasant conversation. He was exceedingly fond of society, and in his later years he was a constant frequenter of the Athenæum, where he enjoyed meeting and conversing with his numerous friends.

The principal results of Edward Bunbury's studies, of a permanent character, are to be found in the numerous exhaustive articles scattered through Smith's dictionary of Greek and Roman geography, as well as in the dictionary of mythology and biography. They are models of accuracy and of exhaustive erudition; and Professor Freeman used to say of them that when he saw the initials "E. H. B." he knew that the information would be correct, and that further research was unnecessary.

But the great work of Edward Bunbury's life was his 'History of Ancient Geography,' which was published in 1879. There was no historical review of this important subject as a whole, in the English language, until the appearance of Edward Bunbury's work, which was based on the sound principle of a careful and critical examination of the ancient authorities, while availing himself to the fullest extent of the assistance to be derived from modern travellers and geographers. The great importance of this work was felt so strongly by our Council, that a resolution was presented to Mr. Bunbury, at the anniversary meeting of 1880, recording the Council's "appreciation of his literary labours in the production of a work of the highest value, combining accurate scholarship with large observation, and displaying a thorough acquaintance with modern geographical discovery as well as with classical literature." Edward Bunbury had become a Fellow of the

Society in 1839, and served on the Council in 1846–47. In replying to the letter, enclosing the resolution, he expressed his "gratification that, after having been so many years a Fellow of the Society, he should, before the close of his career, be found worthy of this public testimonial that he had been able to do something towards the advancement of that science which had been an object of interest to him from his earliest youth." Edward Bunbury was not merely a geographer and a classical scholar, he was also an accomplished numismatist, and his lodgings in St. James's Street contained a select collection of valuable coins.

On the death of his brother, Sir Charles Bunbury, Sir Edward succeeded as ninth baronet in 1886, when it became necessary for him to reside part of each year at Barton, but he was seldom long absent from St. James's Street and the Athenæum. He never married, and when he died at Brighton last February, in his eighty-fifth year, he was succeeded by his nephew, the present Sir Henry Bunbury.

Captain Parker Snow.

By the PRESIDENT.

William Parker Snow was, in some respects, and especially in his unswerving devotion to one idea, a remarkable man. He was the son of a lieutenant in the navy who served at Trafalgar, and his mother, a Miss Barker, was descended from the Protector through his youngest daughter, Frances, Lady Russell. Parker Snow was educated at the old Greenwich School under Dr. Riddle, and went out to Australia. After an adventurous life, he became intensely interested in the fate of Sir John Franklin's expedition. In 1850 Government vessels had been sent out to search, both by Barrow's Strait and Bering's Strait; but Lady Franklin considered that the scheme of search would not be complete without an examination of the coasts of Prince Regent's Inlet. She therefore fitted out a small vessel, named the *Prince Albert*, at her own expense, under the command of Commander Forsyth, R.N. Parker Snow eagerly volunteered his services, and they were accepted in the capacity of purser. The present writer was then a midshipman on board the *Assistance*. She was forcing a passage through the ice floes of Melville Bay, and on August 10, 1850, the *Prince Albert* was close to and remained in company until we reached the north water of Baffin's Bay four days afterwards. Those were days when the ice-saws were in use under the bows, sawing out triangular pieces of ice, and floating them out of the passage. The saws were worked by a sort of bell ropes, one to each man; and then it was that I first saw Parker Snow working away at our ice-saws with tremendous energy, full of zeal and enthusiasm, cheery and obliging. He appeared to be a man of about thirty years of age, strong, and capable of much hard work.

Commander Forsyth returned home without wintering, after having visited Franklin's first winter quarters at Beechey Island, and sailed a short distance down Prince Regent's Inlet. It was understood that Mr. Parker Snow strongly protested against the return, and even asked to be put on shore with another volunteer or two, and provisions. On his return he published a small illustrated volume, entitled 'The Voyage of the *Prince Albert* in Search of Sir John Franklin: a Narrative of everyday life in the Arctic Seas' (1851).

Parker Snow's next work was connected with the Fuegian mission; and in 1857 he published 'Two Years' Cruise off Tierra del Fuego and Patagonia, and in the River Plate' (2 vols.). But his thoughts always returned to Sir John Franklin and his gallant companions, and he volunteered his services, and submitted numerous reports and proposals to the Government. For years he maintained that there might be survivors, and in 1860 he published a pamphlet urging his reasons and arguments

for this view. When no notice was taken of his representations, he became embittered; he believed that he had made numerous enemies in high places, and eventually he became almost a monomaniac on the subject. He lost all his property, and he and his wife were reduced to extreme poverty.

Captain Parker Snow had but one idea during the last twenty or thirty years of his life—the fate of the Franklin expedition. Through all his miseries and hardships he worked resolutely and untiringly. He compiled many volumes of indices of Arctic voyages from all sources, of notes and of biographical records of Arctic voyagers, which he called 'The Roll of Honour.' In want and misery, his poor wife dying before his eyes, his goods sold by creditors, still he worked on at his one idea, and he was working at his index volumes almost to the hour of his death.

The enthusiast had many good qualities, and was very grateful for any kindness. Our Council granted him £10 in aid but a few days before his death, and he found a few true friends, one or two amongst the most youthful of our Arctic aspirants. At last the over-wrought and worn-out brain found rest. Captain Parker Snow died rather suddenly on the 12th of last March, in his seventy-seventh year. Through the kindness of his friend Sir Duncan Campbell, his remains were decently interred, and his beloved Arctic medal, emblem of all his thoughts and all his work during so many sad and weary years, was placed upon his coffin. It is a melancholy story, and, with the memory of that bright day's work in Melville Bay before me, I for one am glad to say all that can be said of good for a brother Arctic.

CORRESPONDENCE.

A Pre-Columban Discovery of America.

The President has done me the honour to submit my paper on a "Pre-Columban Discovery of America" to a criticism which, though appreciative, is adverse.

The criticism falls into two divisions—(1) an expression of doubts as to the authenticity and interpretation of the legend on Bianco's map, to which I shall return; and (2) a statement of further difficulties, which present themselves when these doubts are waived. The latter are twofold. First, the improbability of a Portuguese vessel crossing the Atlantic in 1447. Secondly, the difficulties of distance and direction arising from the legend "is distant 1500 miles to the west" on the ixola otinticha. As to the former, the improbability is possible, but the impossibility can scarcely be maintained. In point of mere distance, it is not very much further from Cape Verde to Brazil than from Portugal to the outer Azores, while the former voyage is made much the easier by wind and currents; and even granting that a ship "blown off the shore would have used every effort to return," are accidents to steering-gear or other tackle, which defeat the best intentions, unknown in the history of navigation? As to the second difficulty, it seems to arise from taking the legend to refer to the *course* of some particular vessel. If this *course* is reckoned from the Cape Verde Isles, which Mr. Markham has assumed is done by me, certain difficulties present themselves, which he sets forth clearly. But I have never thought of taking the legend as indicating the course of a vessel, and certainly have never suggested the undiscovered Cape Verde Isles as a starting-point. The simplest and most natural explanation of the unusual legend seemed to be that given on p. 226, namely, that it is a cartographic correction rendered necessary by the limits of the parchment on which the map is drawn. It is, as it were, a word of warning from the draughtsman to the future users of the map—"there is really some land south-west from Cape Verde, but lest you should imagine that it is as close as lack of space compels me to draw it, I must

add that it is distant 1500 miles to the west." As to the "point of departure from which to reckon the miles, the most obvious is the position in which the island is shown on the map, while it is probably safest to take the round figures 1500 as meaning "a considerable number."

By making Bianco's inscription refer to the course of a vessel, and taking it in close connection with Galvão's somewhat fanciful narrative, the ingenious theory is arrived at, that the ixola otinticha may have been a third island of the Azores, of which group two had been rediscovered in 1432 and 1444. But a glance at the sketch of the map—Fig. 1—should suffice to show how improbable this is. Here are to be seen no less than seven of the new Azores in their proper places, and far away to the south the ixola otinticha as big in itself as the whole group. In my paper, reasons, based on the difference in latitude, are given to show that the island could not have been meant for any of the Cape Verde Isles, and *a fortiori* it can scarcely be intended for one of the Azores. In fact, to find one of the Azores placed south of Cape Verde, would be as startling as to have Ireland set down in the latitude of the Canaries.

These difficulties, to which I have tried to reply, are based on an acceptation of my reading of the legend on Bianco's map, but in the earlier part of the criticism doubts are expressed about certain points which must not be passed over. They include the threefold suggestion of (1) a possible misreading, (2) interpolation by a later hand, and (3) mutilation of the map.

As to the first, I can only say that the reading adopted seemed the only possible one after a long and careful examination; that it has been confirmed for me by expert palæographers; that it differs in but a single letter from the independent readings of Canale, Desimoni, and Fischer, the only authorities who have written on the subject; and, finally, that the well-known scholar, Padre Ceriani, Curator of the Ambrosian Library, where the map is preserved, assures me that there are only two letters about which there can be uncertainty, namely, the first, which looks like an *a*, and the *e* in "xe," which is doubtful, but probable.

With regard to the second, such a suggestion is unfortunately more easily made than replied to, but, on the other hand, should surely require the clearest evidence to support it. It is really a question for palæographical experts, and more than one have assured me that the handwriting is identical with that in the rest of the map. To convince myself, I compared it letter by letter with the rest, and found apparently absolute identity; even the same habit of joining preposition to noun is to be seen (cf. "aponente" in Fig. 4 with "alondra" in Fig. 3, p. 226).

Finally, as to the possible mutilation of the manuscript by excision of a line, it only remains for me to express deep regret that such a suggestion, which would open up endless avenues for the wildest speculations to sport in, should receive the strong sanction of the President's name. I trust it was only thrown out as a possible objection, which should at once be met, even though this is not easy. At first there seemed but two ways of answering it—to indicate the absence of motive for such mutilation, and to point out that the parchment is trimmed at the neck end more on the right than on the left, whereas if the trimming had been subsequent to the date of the drawing, it would have probably been made symmetrical, in which case the whole island would have gone; but happily there seems to be a stronger argument. Notice the *a* in "mia;" it has a remarkable flourish. This is not to be found in the other *a*'s, in "ixola" or "otinticha." Now, an examination of the rest of the map shows that this flourish is always used when an *a* ends a legend, and only when this is the case (cf. the terminal *a*'s in "terra de palmera," and "terra derrea" in Fig. 2, p. 224). It would therefore appear not unreasonable to believe that "mia" is the last word of the legend, and that nothing is missing.

I have ventured to reply at some length, since the President kindly says that he is still open to conviction. I can but trust that some difficulties have been removed.

The above was written before I had seen Professor Westlake's letter. A delay in publication enables me to express my cordial thanks for its support. The opinion of so eminent a jurist in a matter which must be largely a question of the balance of evidence is of the greatest value.

H. YULE OLDHAM.

King's College, Cambridge.

MEETINGS OF THE ROYAL GEOGRAPHICAL SOCIETY, SESSION 1894-1895.

Ninth Ordinary Meeting, March 25, 1895.—CLEMENTS R. MARKHAM, ESQ., C.B., F.R.S., President, in the Chair.

ELECTIONS.—*Lesley William Alexander; Arthur Austin; G. F. Scott Elliot; Baron Anatole von Hügel; Sir Charles Allen Lawson; James Murray Molesworth; Sir Henry Rawlinson, Bart.; Lieut.-Colonel R. Gardner Warton.*

The PRESIDENT: There is one name in the list of the new Fellows of the Society which I cannot help alluding to with pleasure; it is the name of Sir Henry Rawlinson. We are all delighted to find that this name still remains on the list as one of our associates.

Subscriptions have been coming in for the International Congress, and I am glad to say that several important city companies, the Goldsmiths, Fishmongers, Drapers, and others, have subscribed very handsomely. I have to announce that on May 20 we shall commemorate the fiftieth anniversary of the sailing of Sir John Franklin's expedition from England, and I may mention that it is the intention of H.R.H. the Duke of York to be present on that occasion. The Society's conversazione will take place on the evening of the anniversary, May 27.

The Paper read was:—

"Chitral, Hunza, and the Hindu Kush." By Captain F. E. Younghusband, C.I.E. (Indian Staff Corps).

Tenth Ordinary Meeting, April 8, 1895.—CLEMENTS R. MARKHAM, ESQ., C.B., F.R.S., President, in the Chair.

ELECTIONS.—*Geo. T. Bean; Jno. Geo. Dunn; Howard Haywood; James Ford Hughes; William Langlands; Captain F. Lee (4th Hussars); Charles Algernon Moreing; Henry Cecil Low Morris, M.D., etc.; Joseph Waldie Peirson; M. M. Rodocanachi; H. Thornhill Timmins.*

The PRESIDENT said: I have to announce that we have postponed the anniversary dinner until the week of the meeting of the Congress, in order to give us an opportunity of inviting our foreign friends as guests. The subscriptions for the Congress are coming in tolerably satisfactorily, and we are going to send out a circular inviting the Fellows to show hospitality to our guests; but Fellows of the Royal Geographical Society are so well known for their extraordinary hospitality on all occasions of this kind, that I thought it was almost unnecessary to send a reminder.

The Paper read was:—

"A Journey to Mount Ruwenzori, and South to Lake Tanganyika." By G. F. Scott-Elliot.

GEOGRAPHICAL LITERATURE OF THE MONTH.

Additions to the Library.

By HUGH ROBERT MILL, D.Sc., *Librarian*, R.G.S.

The following abbreviations of nouns and the adjectives derived from them are employed to indicate the source of articles from other publications. Geographical names are in each case written in full :—

A. = Academy, Academie, Akademie.
Ann. = Annals, Annales, Annalen.
B. = Bulletin, Bollettino, Boletim.
Com. = Commerce, Commercial.
C. R. = Comptes Rendus.
Erdk. = Erdkunde.
G. = Geography, Geographie, Geografia.
Ges. = Gesellschaft.
I. = Institute, Institution.
J. = Journal.
M. = Mitteilungen.
Mag. = Magazine.
P. = Proceedings.
R. = Royal.
Rev. = Review, Revue, Revista.
S. = Society, Société, Selskab.
Sitzb. = Sitzungsbericht.
T. = Transactions.
V. = Verein.
Verh. = Verhandlungen.
W. = Wissenschaft, and compounds.
Z. = Zeitschrift.

On account of the ambiguity of the words *octavo*, *quarto*, etc., the size of books in the list below is denoted by the length and breadth of the cover in inches to the nearest half-inch. The size of the *Journal* is 10 × 6½.

EUROPE.

Alps—Gross-Venediger. **Löwl.**

Der Gross-Venediger. Von Prof. Ferdinand Löwl. (Separat-Abdruck aus dem Jahrbuch der k. k. geolog. Reichsanstalt, 1894, Bd. 44, Heft 3.) Wien, 1894. Size 10½ × 7½, pp. [18]. *Presented by the Author.*

Austria-Hungary—Sonnblick. **Obermayer and Schindler.**

Sitzb. A.W. Wien (Abth. II. a.) **103** (1894) : 107–114.

Die trigonometrische Höhenbestimmung des Hohen Sonnblicks in der Goldberggruppe der Hohen Tauern. Von Oberst A. v. Obermayer und Hauptmann Anton Schindler.

England. **Rooper.**

Cassell's New Geographical Readers. Third Book. England. [By T. G. Rooper.] London : Cassell & Co., 1894. Size 7 × 5½, pp. 190. *Illustrations. Price* 1*s. Presented by the Author.*

England and Wales—Gazetteer. **Brabner.**

The Comprehensive Gazetteer of England and Wales. Edited by J. H. F. Brabner. [Vol. iv. Let—Nev.] London : W. Mackenzie [1895]. Size 10½ × 7½, pp. 336. *Maps and Plans. Presented by the Editor.*

A large portion of this volume is occupied by the article London, while two other large towns, Liverpool and Manchester, claim considerable space.

France—La Charente. *B.S.G. Rochefort* **16** (1894) : 253–271. **Fermond.**

La Charente préhistorique. Vallées de la Tardoire et du Bandiat. Notes sur les différents ages de la pierre et sur l'age du bronze dans ces deux vallées. Par M. J. Fermond. *With Map and Plate.*

France—Languedoc. **Malavialle.**

Le Littoral du Bas-Languedoc. Par le Professeur L. Malavialle. Montpellier, 1894. Size 10 × 6½, pp. 70. *Presented by the Author.*

Holland. *Tijds. Ned. Aard. Genoots. Amsterdam* (2) **11** (1894) : 871–910. **Lorié.**

De gedaantewisselingen der Schelde en der Maas. Door Dr. J. Lorié. *With Maps.*

Hungary—Lake Balaton. *Abrégé B.S. Hongroise G.* **23** (1894) : 20–23. **Lóczy.**

Bericht über die Tätigkeit der Balatonsee-Kommission in den Jahren 1892 und 1893. [By Ludwig v. Lóczy.]

Hungary—Transylvania. *Abrégé B.S. Hongroise G.* **23** (1894) : 10–13. **Téglás.**

Nouvelles recherches topographiques sur la Dacie. Importance du camp romain "Vurvu lui Petrin." [By Gabriel Téglás.]

Hungary—Wells. *Abrégé B.S. Hongroise G.* **23** (1894): 1–10. **Hanusz.**

Les puits miraculeux de notre patrie. Par Etienne Hanusz.

Iceland. *G. Tidskrift* **13** (1895–96): 3–37. **Thoroddsen.**

Fra det sydøstlige Island. Rejseberetning fra Sommeren, 1894, af Dr. phil. Th. Thoroddsen. *With Map.*

Italy—Rome. **Murray.**

A Handbook of Rome and its Environs. Fifteenth Edition. With Ninety Plans and Maps of the City and environs. Classical Antiquities. Edited by Prof. Rodolfo Lanciani. Sculpture Galleries. Edited by A. S. Murray. Picture Galleries. Edited by the late Rt. Hon. Sir A. Henry Layard. Mediæval Antiquities. Edited by the Rev. H. W. Pullen. General Editor, the Rev. H. W. Pullen. London: John Murray, 1894. Size 7 × 5, pp. xii., 92, and 492. *Price* 10*s*. *Presented by the Publisher.*

This edition deserves special notice on account of the remarkably small size of the volume obtained by the use of a special paper, light, thin, but remarkably opaque, making the book one well adapted for the pocket. Several new maps are also introduced with great advantage.

Norwegian Pilot. **Fabricius.**

Den Norske Lods, udgiven af den Geografiske Opmaaling. 7de Hefte. Fra Aalesund til Bejan og Trondhjem, samt til Kvalø paa Smølens Vestside. Ved J. S. Fabricius. Kristiania: Grøndahl & Son, 1893. Size 9 × 6, pp. xxiii. and 286. *Price* 1 *kr*. *Presented by the Author.*

Portugal. *J. Manchester G.S.* **9**, 1893 (1895): 227–257. **Mellor.**

Notes of a Journey in Portugal in 1893. By E. W. Mellor. *With Maps and Illustrations.*

Pyrenees—Andorra. *Scottish G. Mag.* **11** (1895): 105–114. **Smith.**

Andorra: the Republic of the Pyrenees. By John Smith.

Russia—Caucasus. **Levier.**

Émile Levier. A travers le Caucase. Notes et impressions d'un Botaniste. Avec de nombreuses illustrations de F. Huguenin-Lassauguette et des reproductions directes d'après les photographies de MM. Stéphen Sommier et Vittorio Sella. Paris: Libraire Fischbacher [1895]. Size 10 × 7, pp. 348. *Map. Price* 10 *francs.*

There is geography and much general observation as well as botany in this record.

Russia—Finland. ———

Finland in the Nineteenth Century by Finnish Authors. Illustrated by Finnish Artists. Helsingfors: printed by F. Tilgmann, 1894. Size 14 × 11, pp. 368. *Map and Illustrations.*

This is a remarkable volume, written in Swedish by some of the most eminent scientific and literary men in Finland, translated into English by Finnish ladies, illustrated by Finnish artists, and printed in Helsingfors. It bears emphatic testimony to the vigour and artistic productiveness of the Finnish people, and forms a monograph on Finland such as few countries are fortunate enough to possess. The literary contents include The Country, and The People, by Z. Topelius; Political Review, by L. Mechelin; National Economy and Public Education, by various authors; Scientific and Literary Associations, including an account of the Society for the Geography of Finland, and the Finnish Geographical Society; three chapters on the literature of Finland, and one on Art, all profusely illustrated by admirable reproductions. Three fine maps are also given. The literary perfection of the English translation is guaranteed by the editorial supervision of the late Mr. James Sime.

Scotland. **Murray.**

Handbook for Travellers in Scotland. Sixth Edition. With travelling Maps and Plans. London: John Murray, 1894. Size 7 × 5, pp. xxxvi. and 476. *Price* 9*s*. *Presented by the Publisher.*

This edition is recast and almost entirely re-written. It is printed on thin paper, making the volume very portable, and is enriched by a new set of maps, most of which are coloured orographically.

Southern Europe—Sicily and Portugal. **Boutroue.**

Une heure en Sicile. Un coup d'œil sur le Portugal. Deux conférences faites à la Société de Géographie de Paris, accompagnées de deux cartes.

Par Alexandre Boutroue. Extrait de la Revue de Géographie (Septembre Octobre-Décembre 1894, Janvier 1895). Paris: E. Leroux, 1895. Size 10 × 6½, pp. 60. *Presented by the Author.*

Switzerland—Lake of Geneva. **Forel.**

F.-A. Forel. Le Léman. Monographie Limnologique. Tome Second. Lausanne: F. Rouge, 1895. Size 10 × 6½, pp. 652. *Map and Diagrams. Price* 15*s.*

A full review of the two volumes of this most important limnological work will appear.

ASIA.

Caucasia. *Verh. Ges. Erdk. Berlin* **22** (1895): 192–216. **Radde.**

Ein Neujahrsfahrt in das Talyscher Tiefland. Von Dr. Gustav Radde.

An account of a hunting trip made in January of the present year.

Central Asia—Karategin, etc. **De Rocca.**

Rev. G. **36** (1895): 24–37, 105–115, 179–188.

Karatéghine et Darvoz. Par Félix de Rocca.

Central Asia—Mongolia and Tibet. **Rockhill.**

Diary of a Journey through Mongolia and Tibet in 1891 and 1892. By William Woodville Rockhill. Washington: Smithsonian Institution, 1894. Size 9½ × 6, pp. xx. and 414. *Map and Illustrations. Presented by the Author.*

The journey here described has been already recognized by the presentation of the Royal Geographical Society's gold medal to Mr. Rockhill. The present volume is a book of adventurous travel; but it is much more, bearing evidence, not only of Mr. Rockhill's observing power, but of his profound oriental scholarship. The appendices include vocabularies, geographical and meteorological tables.

China. **Gundry.**

China, Present and Past. Foreign Intercourse, Progress and Resources, the Missionary Question, etc. By R. S. Gundry. London: Chapman & Hall, 1895. Size 9 × 6, pp. xxxii. and 414. *Maps. Price* 10*s.* 6*d. Presented by the Publishers.*

Mr. Gundry has thrown into book form a number of valuable articles on different phases of Chinese life which had previously appeared in periodicals, supplementing these and adding a map. The chapter on the Yellow river is of considerable geographical interest; but the book, taken as a whole, is most serviceable in throwing light on Chinese laws and life.

China. **Schlegel.**

Problèmes Géographiques. Les peuples étrangers chez les historiens Chinois. XVIII. San Sien Chan. Les trois Iles enchantées. Par Gustave Schlegel. Leyden: E. J. Brill, 1895. Size 10 × 7, pp. 66. *Presented by the Author.*

India. ——

A Classified List, in alphabetical order, of Reports and other publications in the Record Branch of the India Office, December, 1892. London: Printed by Eyre and Spottiswoode, 1894. Size 13½ × 8½, pp. viii. and 230. *Presented by the Secretary of State for India.*

A subject catalogue of the voluminous contents of the India Office Library, the value of which for reference would have been enhanced had some indication been given of the system of classification employed.

India. *J.S. Arts* **43** (1895): 310–325. **Menon.**

Village Communities in Southern India. By C. Krishna Menon.

India—Burma, Mandalay. **Colbeck.**

Letters from Mandalay. A series of letters for the most part written from the Royal City of Mandalay during the Troublous Years of 1878–79; together with letters written during the last Burmese Campaign of 1885–88, by the late James Alfred Colbeck. Edited by George H. Colbeck. Knaresborough: A. W. Lowe, 1892. Size 7½ by 5, pp. vi. and 114. *Presented by the Editor.*

India—Burma, Spirit-levelled Heights. **Hill.**

Trigonometrical Branch, Survey of India, Spirit-levelled Heights. No. 1, Burma. Season 1892–93. Prepared . . . by Lieut.-Col. J. Hill, under the directions of Colonel G. Strahan. . . . Dehra Dun: B. V. Hughes, 1894. Size 10 × 6, pp. vii. and 84. *Map. Presented by the Secretary of State for India.*

India—Ceylon and Burma. **Murray.**

A Handbook for Travellers in India, Ceylon, and Burma, including the Provinces of Bengal, Bombay, and Madras (the Punjab, North-West Provinces, Rajputana, Central Provinces, Mysore, etc.), the Native States, Assam, and Cashmere. Second Edition. *With Seventy-five Maps and Plans.* London: John Murray, 1894. Size 7 × 5, pp. lxiv. and 484. *Price* 20*s. Presented by the Publisher.*

Thorough revision and the inclusion of additional maps make this admirable guide still more useful in its new edition.

Indian Empire—Sikkim. **Louis.**

The Gates of Thibet. Additional Chapter. Size 9½ × 6½, pp. [24]. *Plates. Presented by the Author.*

This additional chapter deals with the frontier market of Yatong, and is illustrated by several photographs.

India—Kashmir Frontier. *J.R. Colonial I.* **26** (1895): 385–397. **Younghusband.**

On the Kashmir Frontier. By Captain F. E. Younghusband.

India—Punjab. **Latif.**

History of the Panjáb, from the remotest antiquity to the present time. By Syad Muhammad Latif. Calcutta: the Calcutta Central Press Co., 1891. Size 10 × 7½, pp. xx. and 652. *Map. Presented by the Author.*

This is a work of much learning and research, treating the history of the Punjab in five periods—the Early period down to the Mohammedan invasion, the Mohammedan period, the Rise of the Sikhs, the Life of Maharaja Runjit Singh, and the Period following the death of Runjit Singh.

India—Punjab. ———

Report on the Administration of the Punjab and its Dependencies for 1893–94. Lahore: Punjab Government Press, 1894. Size 13½ × 8½, pp. xiv., 10, 222, and clxvi. *Map and Diagram. Presented by the Secretary of State for India.*

Japan. **Chamberlain and Mason.**

A Handbook for Travellers in Japan. By Basil Hall Chamberlain and W. B. Mason. With twenty-six Maps and Plans and numerous Illustrations. Fourth Edition. London: John Murray, 1894. Size 7 × 5, pp. x., viii., and 530. *Price* 15*s. Presented by B. H. Chamberlain, Esq.*

The guide-book has been brought to date.

Japan. *T. Asiatic S. Japan* **22** (1894): 253–284. **Droppers.**

The Population of Japan in the Tokugawa Period. By Garrett Droppers.

Japan. **Wenckstern**

A Bibliography of the Japanese Empire. Being a Classified List of all Books, Essays, and Maps in European languages relating to Dai Nihon [Great Japan], published in Europe, America, and in the East from 1859–93 A.D. [VIth year of Ansei—XXVIth of Meiji], compiled by Fr. von Wenckstern. To which is added a facsimile reprint of Léon Pagès, Bibliographie Japonaise depuis le XV^e^ siècle jusqu'à 1859. Leiden: E. J. Brill; London: Kegan Paul & Co., 1895. Size 10 × 6, pp. xiv., 338, and 68. *Price* 25*s.*

Japan—Railways. *T. Asiatic S. Japan* **22** (1894): 115–252. **Trevithick.**

The History and Development of the Railway System in Japan. By Francis H. Trevithick. *With Map and Plate.*

An exhaustive review of the history and present development of the Japanese railway system.

Korea. **Gowland.**

Notes on the Dolmens and other Antiquities of Korea. By W. Gowland. [Reprinted from the *Journal of the Anthropological Institute*, February, 1895.] London: Harrison & Sons, 1895. Size 8½ × 5½, pp. 16. *Plate. Presented by the Author.*

Korea. **Savage-Landor.**

Corea or Cho-sen, the Land of the Morning Calm. By A. Henry Savage-Landor. London: W. Heinemann, 1895. Size 9 × 6, pp. xiv. and 304. *Portrait and Illustrations.*

Mr. Landor's successful record of his travels in Yezo will ensure a good reception for his account of Korea, in which the same aptness of illustration and vividness in description are to be found. The book deals rather with sketches of life and character, than with travels through the country.

Korea. *J. Anthropological I.* **24** (1895): 299–330. **Saunderson and Gowland.**

Notes on Corea and its People. By H. S. Saunderson. Notes on the Dolmens and other Antiquities of Korea. By W. Gowland.

Persia—Khorasan. *Globus* **67** (1895): 149–152. **Hahn.**

Das heutige Chorasan. Mitgeteilt von C. Hahn. Tiflis.

Philippine Islands—Mindanao. **Aguilar.**

Mindanao, su Historia y Geografia. Por José Nieto Aguilar. Con un prologo de Don Francisco Martin Arrúe. Madrid, 1894. Size 9½ × 6½, pp. viii. and 152. *Map.*

Russia—Mongolia. *M. G. Ges. Wien* **38** (1895): 26–57. **Leder.**

Eine Sommerreise in der nördlichen Mongolei im Jahre 1892. Von Hans Leder. I. Von der Tola an den Orchon.

Russian Armenia. *J.S. Arts* **43** (1895): 225–233. **Markoff.**

Russian Armenia and the prospects for British trade therein. By Dr. Anatolius Vladimirovich Markoff.

An interesting account of the people and commercial resources of Russian Armenia.

Sakhalin. *Tijds. Ned. Aard. Genoots. Amsterdam* (2) **11** (1894): 737–748. **Kramp.**

Die geschiedenis der ontdekking van het eiland Sachalin. Door F. G. Kramp.

Siam—Upper Mekong. **Smyth.**

Notes of a Journey on the Upper Mekong, Siam. By H. Warington Smyth. *With Maps and Illustrations.* Published for the Royal Geographical Society, by John Murray, 1895. Size 9 × 6, pp. x. and 110. *Price to the Public, 7s. 6d.*

Mr. Warington Smyth's paper, recently read before the Royal Geographical Society, has been published in this attractive form with the author's numerous sketches, instead of being printed in the *Geographical Journal*. It is sold to Fellows at a reduced price.

Syria. *Z. Ges. Erdk. Berlin* **29** (1894): 142–188, 475–550. **Hartmann.**

Das Liwa Haleb (Aleppo) und ein Teil des Liwa Dschebel Bereket. Reisen, ausgeführt mit Unterstützung der Karl Ritter-Stiftung der Gesellschaft für Erdkunde, und dargestellt von Martin Hartmann. *With Map.*

Tibet—Religion. **Waddell.**

The Buddhism of Tibet or Lamaism, with its Mystic Cults, Symbolism, and Mythology, and in its relation to Indian Buddhism. By L. Austine Waddell, M.B. London: W. H. Allen & Co., 1895. Size 9 × 6, pp. xviii. and 598. *Illustrations. Presented by the Secretary of State for India.*

Surgeon-Major Waddell enjoyed many exceptional privileges in investigating modern Buddhism, and the result is a work of quite unique interest. It is the most authoritative exposition of the ritual and belief of modern Lamaism which has yet been published, and on this account it forms a notable contribution to the history of Buddhism.

Turkey in Asia. **Cuinet.**

La Turquie d'Asie. Géographie administrative, statistique, descriptive et raisonnée de chaque province de l'Asie-Mineure. Par Vital Cuinet. Tome Quatrième. Fascicule 11. Paris: E. Leroux, 1894. Size 11 × 7½.

This instalment deals with the Mutessariflik of Ismidt.

AFRICA.

Africa. **Brown.**

The Story of Africa and its Explorers. By Robert Brown. Vol. iv. Europe in Africa—Colonies and Colonists—the Scramble for an Empire—a Continent under Companies. London: Cassell & Co., 1895. Size 10½ × 8, pp. viii. and 312. *Illustrations. Presented by the Publishers.*

This volume concludes the work, which forms on its completion the most handsomely illustrated description of Africa with which we are acquainted. The letterpress is written in a thoroughly popular style, and the opinions expressed are characterized by candour and impartiality.

NEW MAPS.

By J. Coles, *Map Curator*, R.G.S.

EUROPE.

England and Wales. **Ordnance Survey.**

Publications issued since March 8, 1895.

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The issue of the above sheets commences the publication of the revised map of England and Wales on the 1-inch scale.

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25-inch—Parish Maps:—

ENGLAND AND WALES:—**Devonshire** (Revision), CXVII. 3, 4, 8, 11, 12, 15, 16; CXXIII. 4; CXXIV. 1, 2, 3, 4, 6, 7, 8, 10, 11, 12, 13, 14, 15, 16; CXXIX. 1, 2, 3, 4, 8; CXXX. 1, 2, 5, 6, 7, 8, 9, 10, 11, 12, 14, 15 and 16, 3*s.* each. **Cornwall** (Revision), XXXVII. 12, 16; XXXVIII. 13; XLV. 4, 8, 12, 16; XLVI. 9, 13; LIV. 3, 4, 8, 12; LV. 1, 5, 6, 10, 13, 14, 3*s.* each. **Lancashire,** CXI. 12 and 16, 11*s.* 6*d.* each; CXII. 9, 14*s.* (coloured). **Yorkshire,** VI. 10, 14*s.*; 12, 8*s.* (coloured).

Town Plans—5-feet scale:—

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(*E. Stanford, Agent.*)

ASIA.

India. **Geological Survey of India.**

Geological Map of India. Scale 1 : 2,027,520 or 32 stat. miles to an inch. Corrected to December 31, 1892. Prepared under the supervision of R. D. Oldham, A.R.S.M., superintendent, and published at the Geological Survey Office. W. King, D.SC., Director, Geological Survey of India. Second Edition. *Presented by H.M. Secretary of State for India, through the India Office.*

AFRICA AND MADAGASCAR.

Algeria. **Service Géographique de l'Armée, Paris.**

Carte topographique de l'Algérie. Scale 1 : 50,000 or 1·26 inch to a stat. mile. Service Géographique de l'Armée, Paris. Sheet No. 75, Oued Zenati; No. 77, Souk-Arrhas. *Price 1 fr. 50 cents each sheet.*

Central Africa. **Götzen.**

Vorläufige Skizze des Reiseweges des Lt. Graf von Götzen quer durch Central-Afrika, 1894. Scale 1 : 5,000,000 or 79 stat. miles to an inch. Gesellschaft für Erdkunde zer Berlin. Sitzung vom 2 Febr. 1895.

Madagascar. **Grandidier and Roblet**

Carte topographique de l'Imerina (Province Centrale de Madagascar). Par A. Grandidier, Membre de l'Institut, et les R. P. Roblet et Colin, S.J., missionnaires à Madagascar. Scale 1 : 200 000 or 3·1 stat. miles to an inch. Feuille Nord. Mars 1895. Gravée et imp. par Erhard, Frres, Paris.

Carte de la Partie Septentrionale d'Imerina. Par A. Grandidier, Membre de l'Institut, et les R. P. Roblet et Colin, S.J. Scale 1 : 100,000 or 1·6 stat. mile to an inch. Imp. Erhard Frères, Paris. 3 Sheets. A. Grandidier, 'Histoire de Madagascar,' t. ii. Géographie physique.

Mashonaland, etc. **Selous.**

Beira Railway. Map showing the route of the line. Scale 1 : 1,000,000 or 15·6 stat. miles to an inch. Messrs. G. Philip & Son, London, 1895. *Presented by Messrs. G. Philip & Son.*

This is the map published in the *Geographical Journal*, January, 1895, on which the Beira railway has been laid down.

Nicaragua. **Mierisch.**

Geologische Karte des nördlichen Teiles der Republik Nicaragua. Im Auftrage der Regierung in den Jahren 1892 und 1893 aufgenommen u. gezeichnet von Dr. Bruno Mierisch. Scale 1 : 700,000 or 10·9 stat. miles to an inch. Petermann's *Geographische Mitteilungen*. Jahrgang, 1895, Tafel 4. Gotha: Justus Perthes. *Presented by the Publisher.*

GENERAL.

Historical Geography. **Schrader.**

Atlas de Géographie Historique. Ouvrage contenant 54 grandes Cartes doubles en couleurs, accompagnées d'un Texte Historique au dos et d'un grand nombre des cartes de Détail, Figures, Diagrammes, etc. Par une Réunion de Professeurs et de Savants, sous la direction Geographique de F. Schrader, director des travaux cartographiques de la librairie Hachette et Cie. Paris: Hachette et Cie, 1895. Livraison 12e. *Price* 1 *fr.* 50 *c. Presented by the Publishers.*

Sheet 15 contains maps illustrating the dismemberment of the Roman Empire in the fifth century; Gaul, Spain, and Italy in the year 506; and South-Western Europe as divided among the Ostrogoths, Vandals, and Visigoths in the year 526. Sheet 36 is a map to illustrate the conflict between Prussia and Austria. Sheet 54 is a map showing the possessions of the different countries in all parts of the world. There are two subsidiary maps, one showing density of population and the expansion of the principal races, the other shows the domain and expansion of the principal languages. Each map is accompanied by well-written letterpress.

CHARTS.

Admiralty Charts. **Hydrographic Department, Admiralty.**

Charts and Plans published by the Hydrographic Department, Admiralty, November and December, 1895. *Presented by the Hydrographic Department, Admiralty.*

No.	Inches.	
1720 m	= 6·0	England, east coast:—Filey bay. 1*s.* 6*d.*
1972 m	= 1·0	Norway, west coast:—Approaches to Trondhjem, eastern sheet. 3*s.*
2073 m	= 0·97	France, north coast:—Cape Barfleur to Courseulles. 2*s.* 6*d.*
2146 m	= 0·97	France, north coast:—Havre to River Durdent. 2*s.* 6*d.*
2147 m	= 0·97	France, north coast:—River Durdent to Cayeux. 2*s.* 6*d.*
2102 m	= 1·48	Canada, Lake Huron:—Western islands to Waubaushene. 3*s.* 6*d.*
1480 m	= 0·12	West Indies:—Tobago to Tortuga. 2*s.* 6*d.*
1966 m	= 0·09	South America, north coast:—Tortuga to Cape La Vela. 2*s.* 6*d.*
2259 m	= 2·75	West Indies, Colombia:—Savanilla harbour (plans, Rio Magdelena, Puerto Colombia pier). 1*s.* 6*d.*
1281 m	= various.	Plans on the Coast of Chile:—Port Calbuco and Huito inlet; Reloncavi inlet; Sotomó bay; Condor, Ranu, Mutcolpue, Milagro and Lamehuapi coves; Yenez bay. 1*s.* 6*d.*

1340 m = various. Plans on the coast of Peru:—Ylo road, Islay bay, Atico road, Lomas road, Ports San Nicholas and San Juan, Independencia bay. 1*s.* 6*d.*

1347 m = various. Plans on the coast of Peru:—Pisco bay, Port Chilca, Chancay bay, Huacho bay, Barranca and Supé bays. 1*s.* 6*d.*

1312 m = various. Plans on the coast of Chile:—Llico road and Vichuquen lagoon, Curanipo road, entrance of the river Maule, Port Tongoi. 1*s.* 6*d.*

599 m = 1·4 Africa, west coast:—Sheet 6: Cape Verde to Cape Roxo, including the river Gambia (plan, Rufisque anchorage). 1*s.* 6*d.*

663 m = 1·92 Africa, east coast:—Mansa and Tanga bays. 2*s.* 6*d.*

2161 m = 2·36 Red Sea:—Ghubbet Soghra. 1*s.* 6*d.*

212 m = 5·14 Sumatra, west coast:—Koninginne bay and Padang road. 1*s.* 6*d.*

2133 m = various. Harbours and anchorages on the north coast of Nipon:—Shibayama harbour, Tsuiyama harbour, Tsuruga bay, Sakai harbour, Wajima anchorage. 1*s.* 6*d.*

2198 m = 6·0 Harbours and anchorages on the north coast of Nipon:—Kaka Ura and Kasa Ura. 1*s.* 6*d.*

2165 m = 3·0 New Hebrides:—Maskelyne islands (plan, Vao anchorage). 1*s.* 6*d.*

856 m = various. Anchorages in the New Hebrides:—Rannon anchorage, Sasun bay, Craig cove, Masevonu anchorage, Losolav anchorage, Dip point anchorage. 1*s.* 6*d.*

2132 m = 5·9 New Hebrides, anchorages in Epi island:—Yemyu cove, Nelson bay, Foreland anchorage, Diamond bay, Ringdove bay. 1*s.* 6*d.*

991 m = various. Anchorages on the coasts of Yezo:—Plan added, Kushiro road; new plan, Hamanaka bay. 1*s.* 6*d.*

1328 m = various. Anchorages in the Chonos archipelago:—Plans added: Anna Pink bay, Port Refuge, Patch cove. 1*s.* 6*d.*

(*J. D. Potter, Agent.*)

Charts Cancelled.

No.	Cancelled by	No.
1720 Filey bay	New Chart. Filey bay	1720
2295 Plan of Orland bay on this sheet	New Chart. Approaches to Trondhjem	1972
394 Trinidad island to Los Roques	New Chart. Tobaga to Tortuga	1480
395 Los Roques to Cape La Vela	New Chart. Tortuga to Cape La Vela	1966
2259 Savanilla harbour and Rio Magdalena.	New Chart. Savanilla harbour	2259
1298 Anna Pink bay, Port Refuge, Patch cove. 1328 Anchorages in the Chonos Archipelago.	New Chart. Anchorages in the Chonos Archipelago	1328
567 Port Culbuco and Huito inlet, Reloncavi inlet, Sotomó bay. 1281 Milagro, Lancehuapi, Muicolpue, Condor, and Ranu coves; Port Yañez. 1340 Isley bay, Atico road, Ylo road. 1369 Lomas road, Ports San Nicholas and San Juan. 1295 Independencia bay.	New Chart. Plans on the coast of Chile	1281
	New Chart. Plans on the coast of Peru	1340

1291 Pisco bay. 1710 Port Chilca. 1347 Barranca and Supé bays, Huacho bay, Chancay bay.	New Chart. Plans on the coast of Peru . . . 1347
809 Port Tongoy 1312 Llico road and Vichuquen lagoon, Curanipe road, entrance of Maule river.	New Chart. Plans on the coast of Chile . . 1312
599 Sheet 6: Cape Verde to Cape Roxo.	New Chart. Sheet 6: Cape Verde to Cape Roxo 599
663 Tanga bay and approaches.	New Chart. Mansa and Tanga bays 663
212 Padang road	New Chart. Koninginne bay and Padang road . 212
61 Plan of Tsuruga bay on this sheet.	New Chart. Anchorages on the north coast of Nipon 2133
856 Plans of Yemyu cove, Nelson bay, Foreland anchorage, and Diamond bay, on this sheet.	New Chart. Anchorages in Epi island . . . 2132
1508 Plan of Maskelyne islands on this sheet.	New Chart. Maskelyne islands 2165
856 Anchorages in New Hebrides islands. 1508 Plan of Dip point anchorage on this sheet.	New Chart. Anchorages in the New Hebrides . 856

335 A small river 10 miles westward of Buffalo.

Charts that have received Important Corrections.

No. 109, England, east coast:—Entrance to the river Humber. 2320, Nova Scotia:—Approach to Halifax. 1467, Gulf of Mexico:—Cape San Blas to Vermilion bay. 534, Guiana:—Approaches to Cayenne. 1337, Magellan strait:—First narrows to Sandy point. 455, Anchorages on the coasts of California and Oregon. 654, North America, north-west coast:—Bering strait. 674, Africa, east coast:—Dar es Salaam harbour and adjoining anchorages. 7, Aden and adjacent bays. 941B, Eastern archipelago, western portion. 2660A, China sea, southern portion. 61, Harbours and anchorages on the north-west coast of Nipon. 993, Anchorages in Yezo island. 1466, China:—Hongkong. 1629, Tasmania:—Macquarie harbour. 2726, New Zealand, west coast:—Manukau harbour. 2553, New Zealand:—Forveaux strait and Stewart island. 214, Pacific ocean:—Solomon islands. 1508, Anchorages in New Hebrides islands.

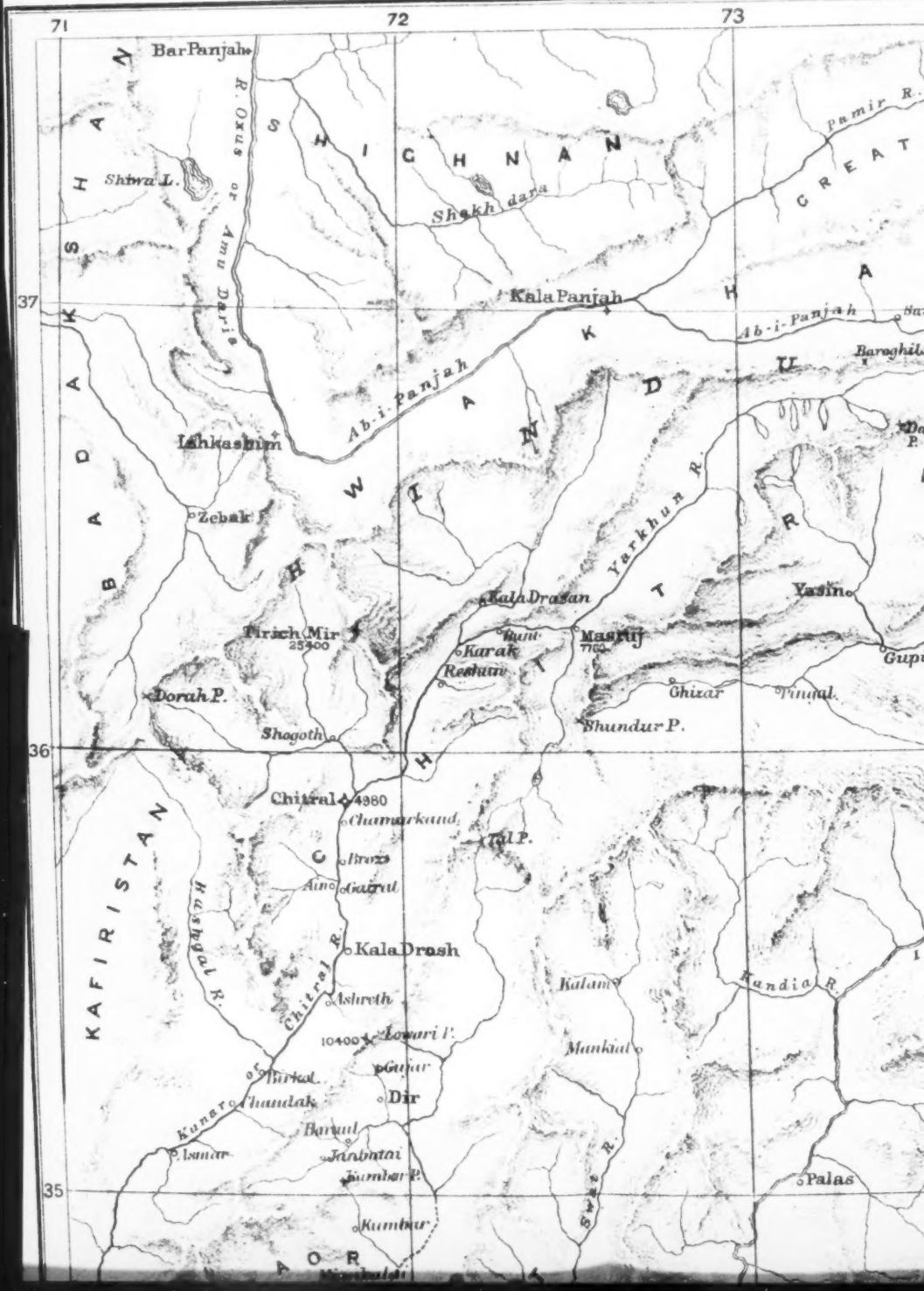
J. D. Potter, agent.

Pilot Chart. **U.S. Hydrographic Office.**

Pilot Charts of the North Atlantic Ocean and North Pacific Ocean for April, 1895. Published at the Hydrographic Office, Bureau of Navigation, Department of the Navy, Washington, D.C., Charles D. Sigsbee, Commander U.S. Navy, Hydrographer. *Presented by the U.S. Hydrographic Office.*

PHOTOGRAPHS.

N.B.—It would greatly add to the value of the collection of Photographs which has been established in the Map Room, if all the Fellows of the Society who have taken photographs during their travels, would forward copies of them to the Map Curator, by whom they will be acknowledged. Should the donor have purchased the photographs, it will be useful for reference if the name of the photographer and his address are given.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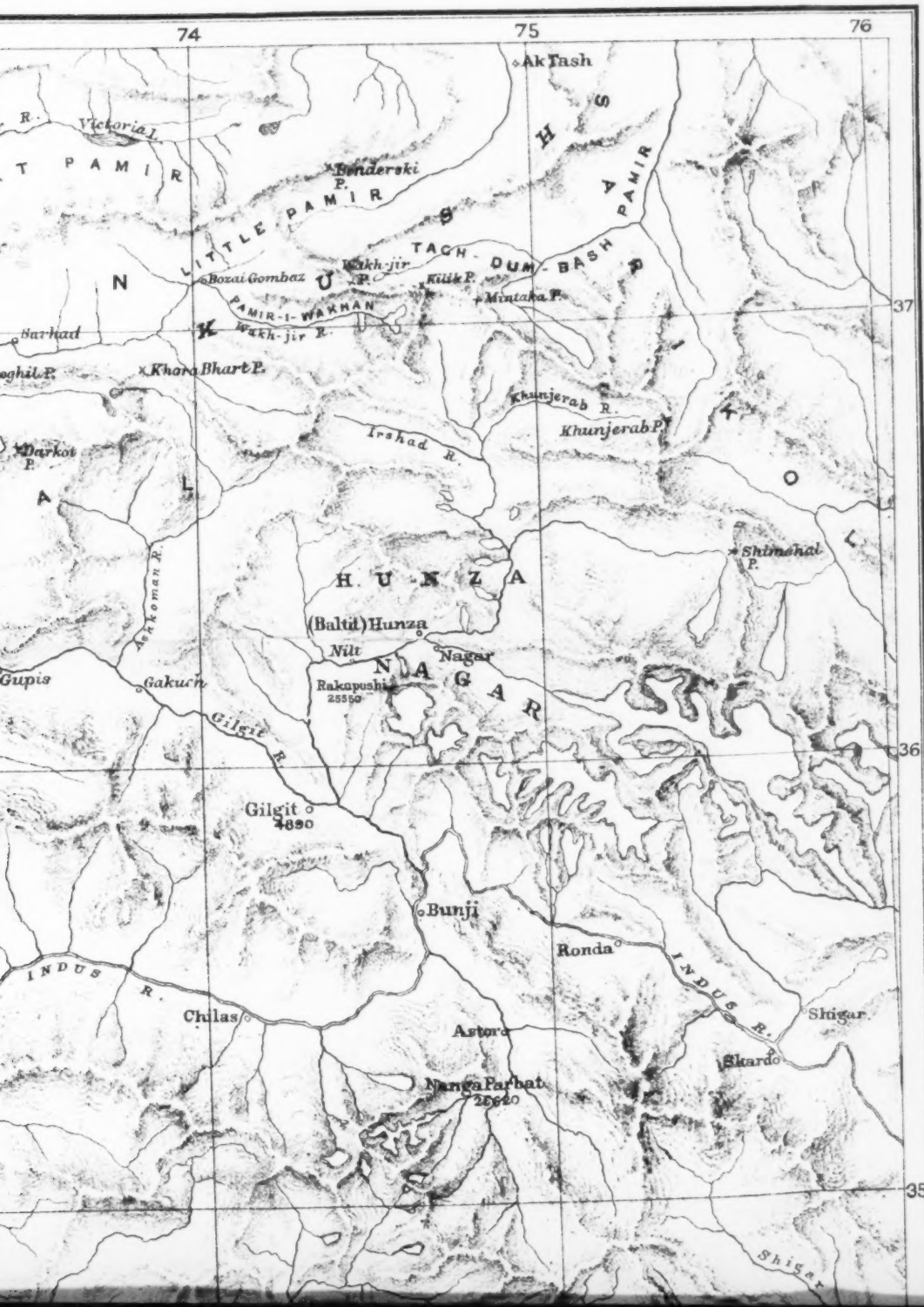
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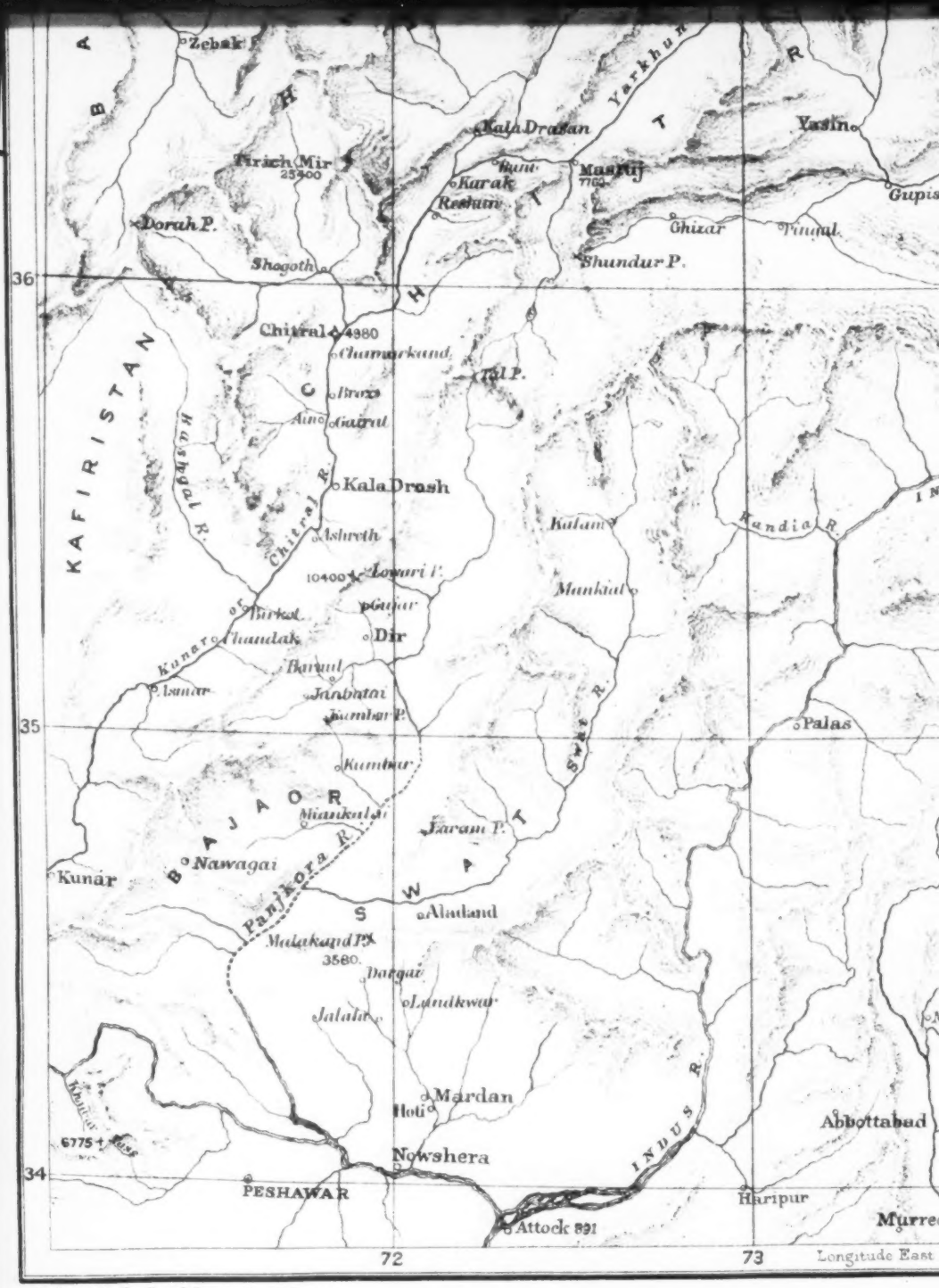

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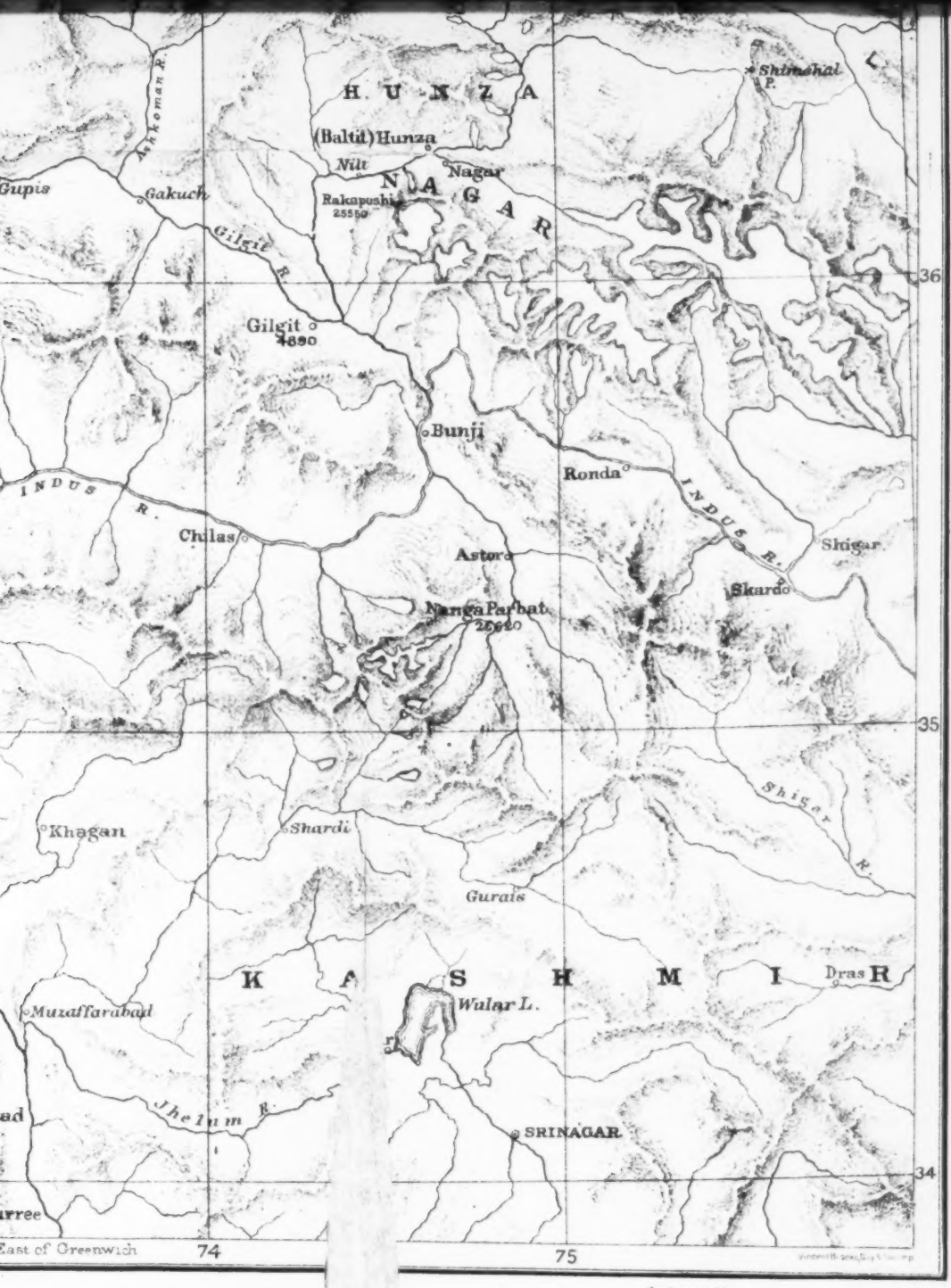

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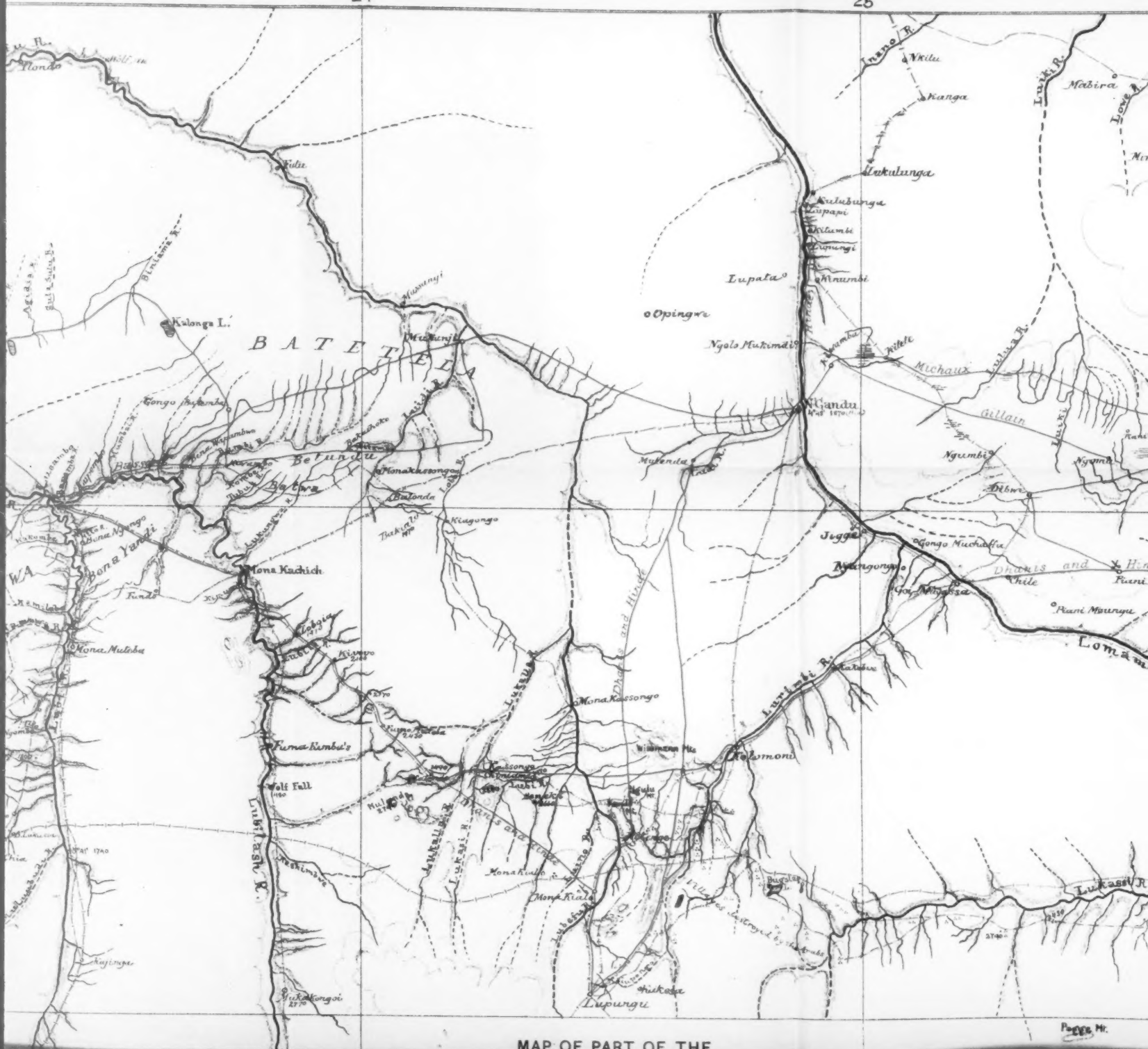

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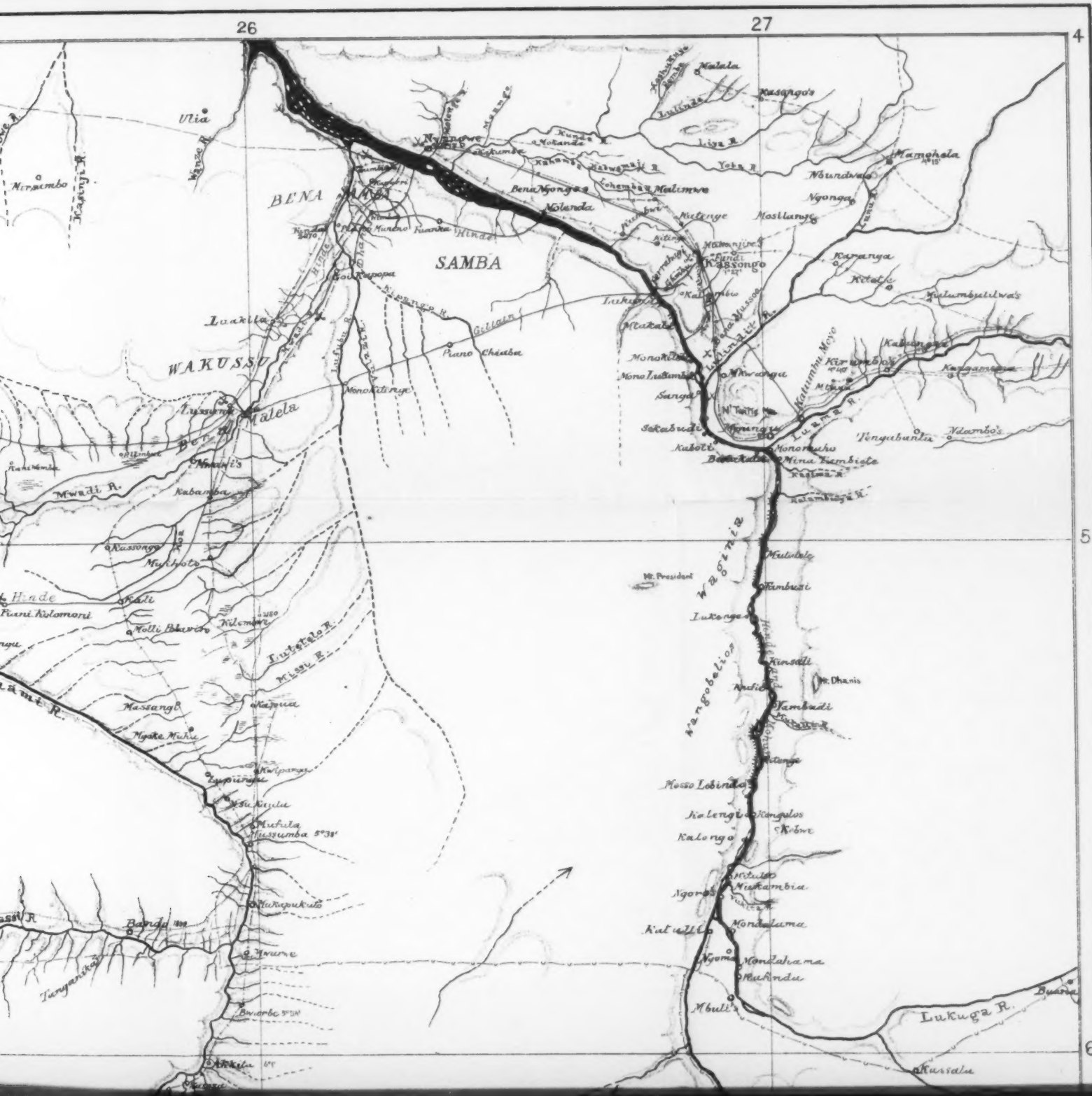
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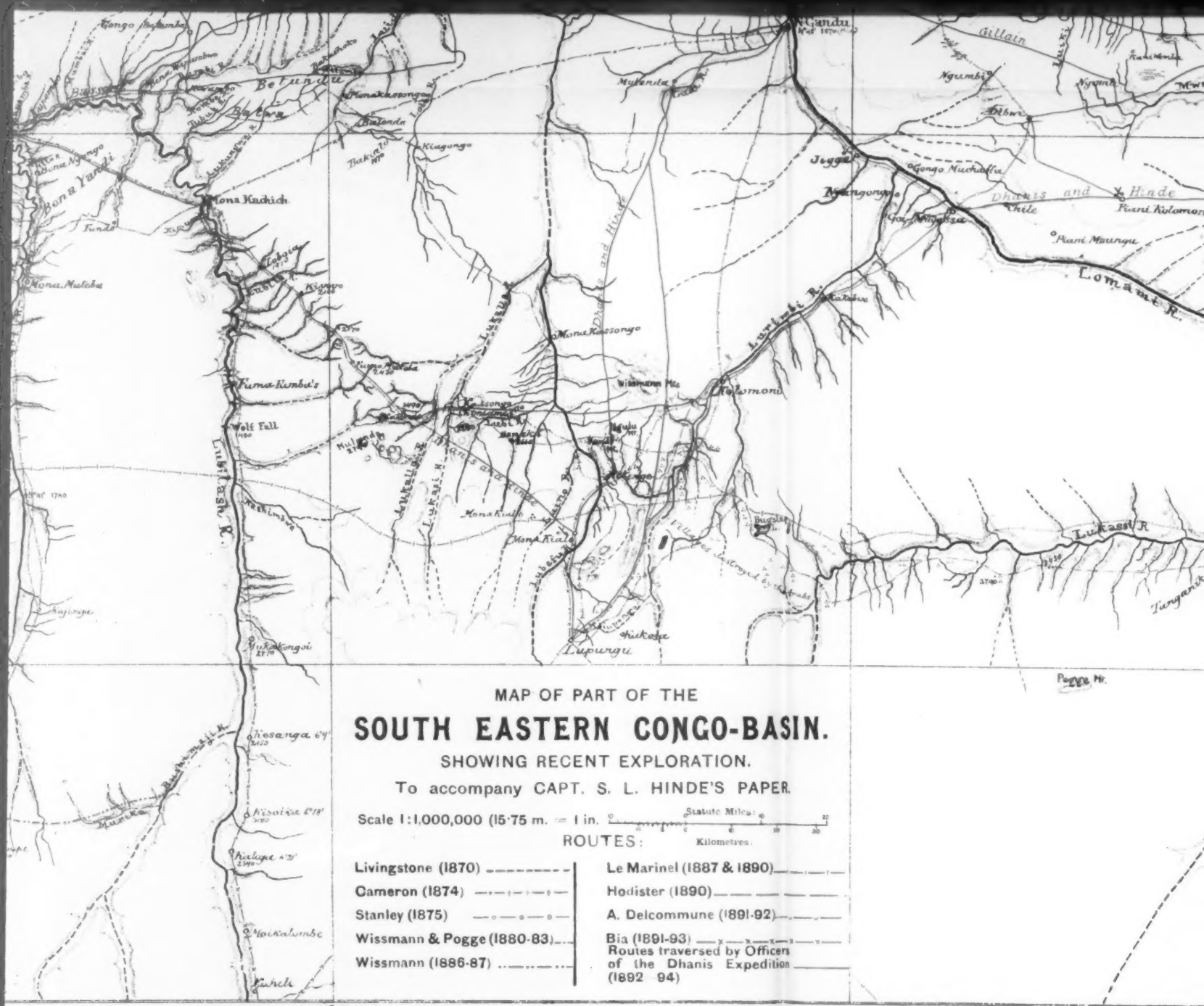


MAP OF PART OF THE

SOUTH EASTERN CONGO-BASIN.

SHOWING RECENT EXPLORATION.

To accompany CAPT. S. L. HINDE'S PAPER.

Scale 1:1,000,000 (15·75 m. = 1 in.

Statute Miles: 0 10 20

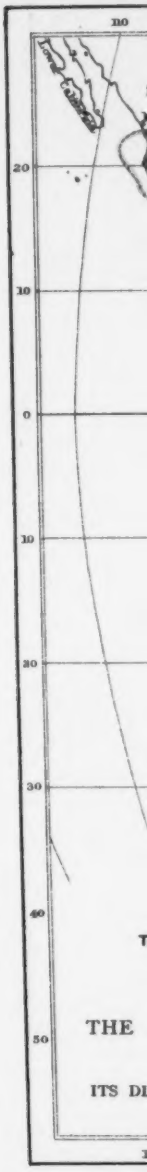
Kilometres: 0 10 20 30

ROUTES:

- Livingstone (1870)
- Cameron (1874)
- Stanley (1875)
- Wissmann & Pogge (1880-83)
- Wissmann (1886-87)
- Le Marinel (1887 & 1890)
- Hodister (1890)
- A. Delcommune (1891-92)
- Bia (1891-93)
- Routes traversed by Officers of the Dhanis Expedition (1892 94)

Published by the Royal Geographical Society

Vincent Brooks, Day & Son lith.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The Geography of Mammals

MAP OF

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SHOWING

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